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Preface

1987 was the year of partial recovery for most segments of the U.S. energy industry. Gains were reported in energy revenue and income compared to the depressed levels that followed the 1986 plunge in crude oil prices. Higher 1987 crude oil prices resulted in increases in the average prices of most petroleum products during the year. In contrast, prices of natural gas and coal declined.

This fourth edition of *Energy Facts*, organized by energy source, provides a reference to a broad range of domestic and international energy data for the general public as well as the technical community. It is designed especially for the business person, government worker, or student who needs a quick reference to major facts about energy.

The data cover 1975 through 1987, except for international energy data, which cover 1976 through 1986. Graphs, charts, and illustrations portray trends, shares, and locations of various energy sources and uses.

The energy data have been selected from several Energy Information Administration (EIA) publications. For detailed and complete information on these tables and graphs, refer to the source publications. For other energy data, see the publications listed on the inside back cover. Specific energy information questions can be answered by the National Energy Information Center specialists (see page 55).

Energy Facts is designed to make energy information more accessible to you. Though this is the fourth edition, we continue to strive to improve it--both in content and format. This year we have added a color to highlight subjects and graphic material. If you have an opportunity to call or write to us at the Center to say what you think of this publication or how you would improve it, we would be pleased to hear from you.

H. A. Merklein

Dr. H. A. Merklein
Administrator
Energy Information Administration

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Contents

U. S. Overview 1

Petroleum Overview 13

Natural Gas Overview 21

Coal Overview 27

Electricity Overview 35

Nuclear Overview 41

World Overview 47

Glossary 51

Units of Measure 53

Energy Equivalents 54

Energy Information Assistance 55

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U.S. Overview

- Total U.S. energy production of 65 quadrillion Btu in 1987 was up 0.5 percent from the 1986 level.
- U.S. consumption of all forms of energy combined rose by 2 percent above 1986 consumption, to 76 quadrillion Btu, the highest level since 1979.
- United States reliance on foreign sources of crude oil and petroleum increased in 1987. Net imports rose to an average of 5.8 million barrels per day.
- In 1987, petroleum net imports rose 6 percent, natural gas net imports rose 35 percent, and coal net exports fell 6 percent from 1986 levels.

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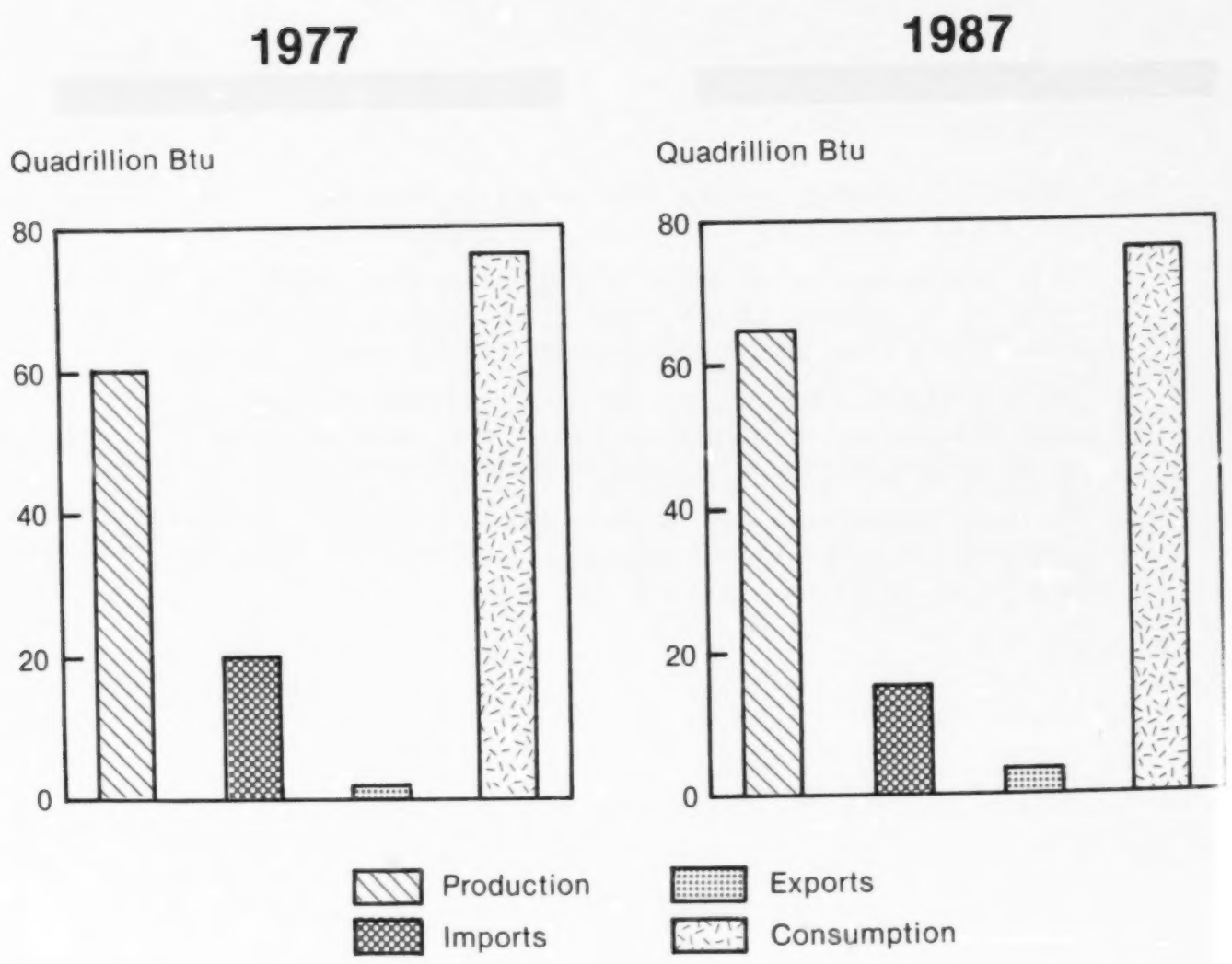
U.S. Energy Balance
(Quadrillion Btu)

Year	Production	Imports	Exports	Consumption
1975	59.9	14.1	2.4	70.6
1976	59.9	16.8	2.2	74.4
1977	60.2	20.1	2.1	76.3
1978	61.1	19.3	1.9	78.1
1979	63.8	19.6	2.9	78.9
1980	64.8	16.0	3.7	76.0
1981	64.4	14.0	4.3	74.0
1982	63.9	12.1	4.6	70.8
1983	61.2	12.0	3.7	70.5
1984	65.8	12.8	3.8	74.1
1985	64.8	12.1	4.2	73.9
1986	64.3	14.4	4.1	74.3
1987P	64.6	15.4	3.9	76.0

P = Preliminary data.

Note: The sum of "Production" and "Imports" less "Exports" does not equal "Consumption" due to stock changes, losses, refinery gains, miscellaneous blending components, unaccounted for supply, and coal shipped overseas to the U.S. Armed Forces.

Source: Energy Information Administration, *Annual Energy Review 1987.*



U.S. Production by Energy Source
(Quadrillion Btu)

Year	Coal	Natural Gas	Crude Oil	NGPL	Hydro-electric Power	Nuclear Power	Other	Total*
1975	15.0	19.6	17.7	2.4	3.2	1.9	.1	**59.9**
1976	15.7	19.5	17.3	2.3	3.0	2.1	.1	**59.9**
1977	15.8	19.6	17.5	2.3	2.3	2.7	.1	**60.2**
1978	14.9	19.5	18.4	2.3	2.9	3.0	.1	**61.1**
1979	17.5	20.1	18.1	2.3	2.9	2.8	.1	**63.8**
1980	18.6	19.9	18.3	2.3	2.9	2.7	.1	**64.8**
1981	18.4	19.7	18.2	2.3	2.8	3.0	.1	**64.4**
1982	18.6	18.3	18.3	2.2	3.3	3.1	.1	**63.9**
1983	17.3	16.5	18.4	2.2	3.5	3.2	.1	**61.2**
1984	19.7	17.9	18.9	2.3	3.3	3.6	.2	**65.8**
1985	19.3	16.9	19.0	2.2	2.9	4.2	.2	**64.8**
1986	19.5	16.5	18.4	2.2	3.0	4.5	.2	**64.3**
1987P	20.1	16.8	17.6	2.2	2.6	4.9	.3	**64.6**

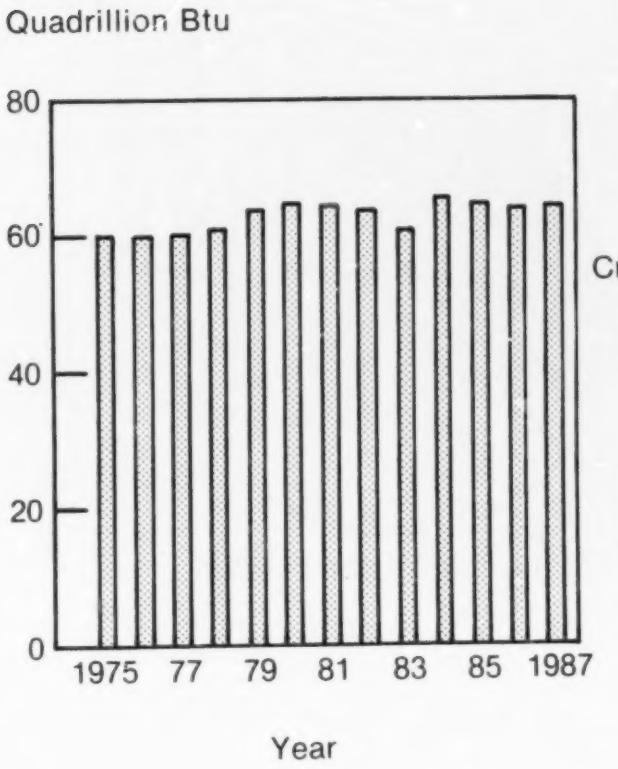
*"Total" may not equal sum of components due to independent rounding and excludes such energy sources as wood, solar, wind, and waste energy, except that consumed at electric utilities.

P = Preliminary data.

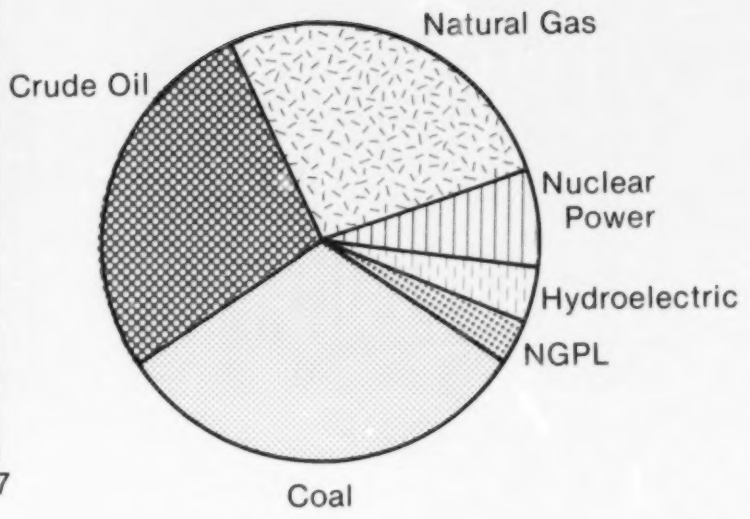
Note: "Natural Gas" is dry. "NGPL" is natural gas plant liquids. "Other" is electricity produced from geothermal, wood, waste, wind, photovoltaic, and solar thermal energy sources connected to electric utility distribution systems.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Production



1987 Production



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U.S. Energy Consumption by Sector
(Quadrillion Btu)

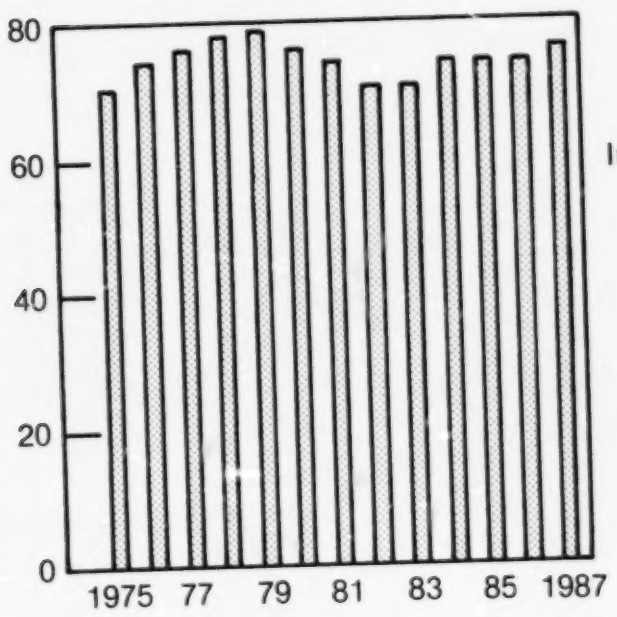
Year	Residential/ Commercial	Industrial	Transportation	Electric Utilities	Total*
1975	23.9	28.4	18.2	20.4	**70.6**
1976	25.0	30.2	19.1	21.6	**74.4**
1977	25.4	31.1	19.8	22.7	**76.3**
1978	26.1	31.4	20.6	23.7	**78.1**
1979	25.8	32.6	20.5	24.1	**78.9**
1980	25.7	30.6	19.7	24.5	**76.0**
1981	25.2	29.3	19.5	24.8	**74.0**
1982	25.6	26.1	19.1	24.3	**70.8**
1983	25.6	25.7	19.1	24.9	**70.5**
1984	26.5	27.7	19.9	25.9	**74.1**
1985	26.8	27.1	20.1	26.5	**73.9**
1986	27.0	26.5	20.8	26.7	**74.3**
1987P	27.6	27.2	21.2	27.6	**76.0**

*"Total" is the sum of "Residential/Commercial," "Industrial," and "Transportation." Consumption by "Electric Utilities" has been allocated to each end-use sector according to electric utility sales to that sector. "Total" may not equal sum of components due to independent rounding.

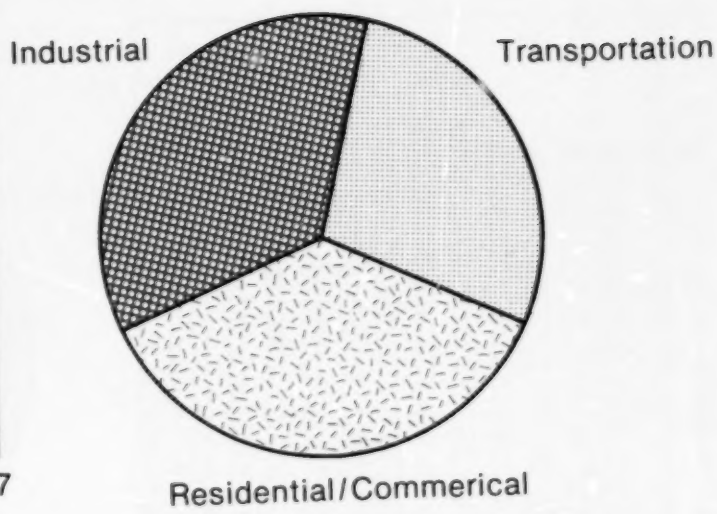
P = Preliminary data.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Consumption



1987 Consumption



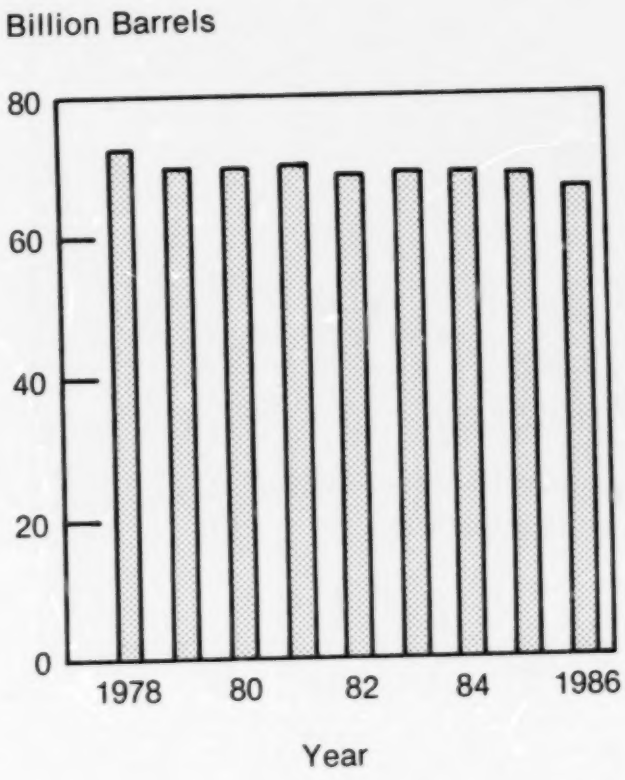
U.S. Proved Reserves of Liquid and Gaseous Hydrocarbons, End of Year

Year	Crude Oil (billion barrels)	Natural Gas (billion barrels COE)*	Natural Gas Liquids (billion barrels COE)*	Total (billion barrels COE)*
1978	31.4	36.5	4.9	**72.8**
1979	29.8	35.4	4.8	**70.0**
1980	29.8	35.2	4.9	**69.9**
1981	29.4	35.7	5.2	**70.3**
1982	27.9	35.7	5.2	**68.8**
1983	27.7	35.6	5.7	**69.0**
1984	28.4	35.1	5.5	**69.0**
1985	28.4	34.4	5.6	**68.5**
1986	26.9	34.0	5.7	**66.6**

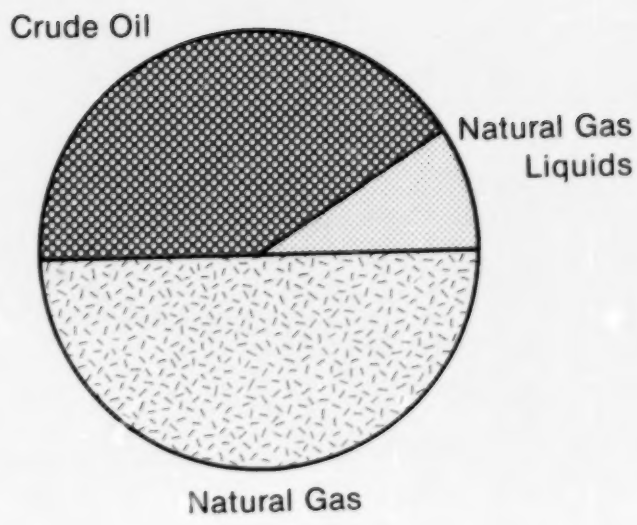
*COE = Crude Oil Equivalent. Natural gas and natural gas liquids were first converted to Btu, based on annual average conversion factors, and then from Btu to COE.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Reserves



1986 Reserves



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U.S. Fossil Fuel Prices

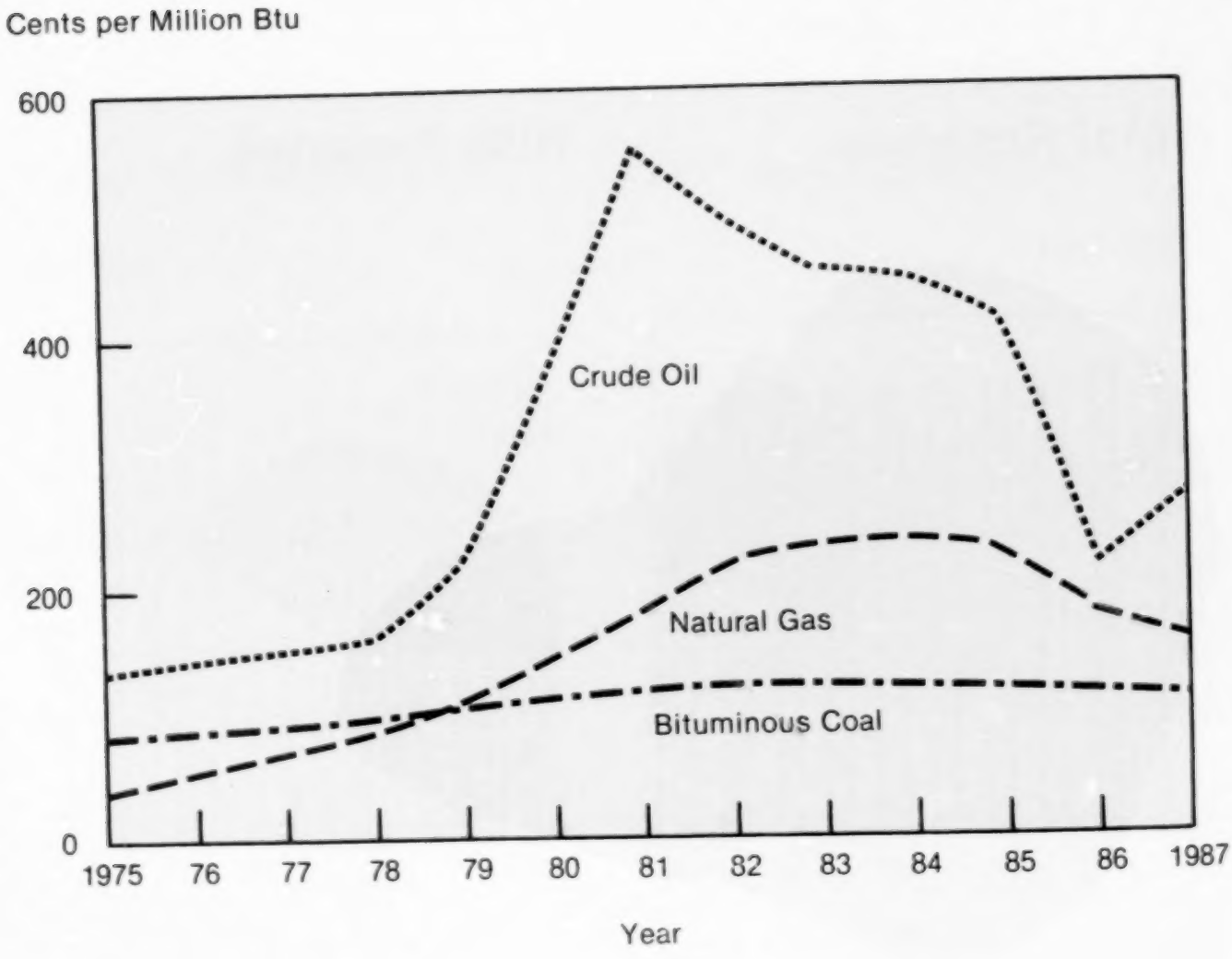
(Cents per Million Btu)

Year	Crude Oil	Natural Gas	Coal		Weighted Average
			Bituminous	Anthracite	
1975	132.2	41.1	83.9	149.5	82.5
1976	141.2	53.1	85.0	153.9	90.2
1977	147.8	72.3	87.7	153.8	100.8
1978	155.2	83.6	97.9	152.7	111.6
1979	217.9	108.1	105.3	177.2	141.7
1980	372.2	144.8	109.4	185.9	204.2
1981	547.8	179.5	117.9	190.1	274.5
1982	491.7	222.2	122.1	214.0	275.8
1983	451.6	232.3	117.2	230.0	270.1
1984	446.2	239.9	115.9	208.7	264.6
1985	415.3	225.7	114.8	204.2	251.2
1986	215.7	174.8	108.2	191.1	165.3
1987P	265.7	154.1	104.8	186.3	171.4

P = Preliminary data.

Note: All fuel prices are taken as close as possible to the point of production. "Bituminous Coal" includes subbituminous coal and lignite.

Source: Energy Information Administration, *Annual Energy Review 1987*.

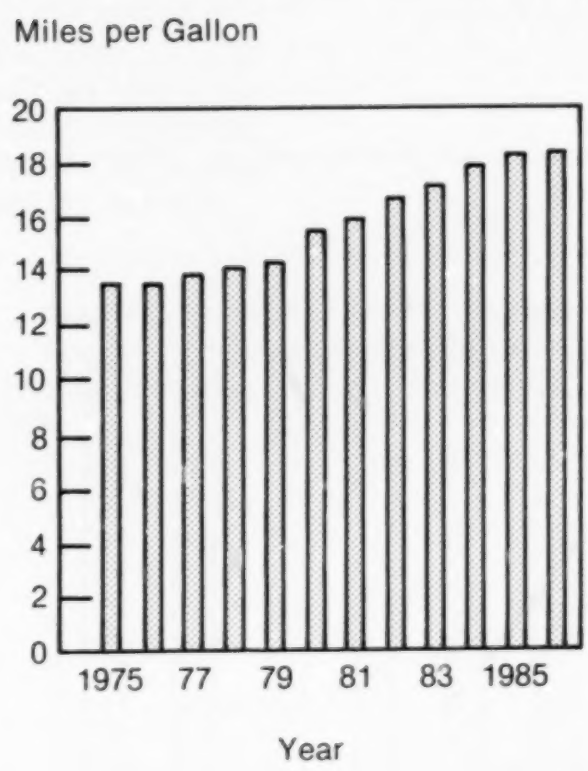


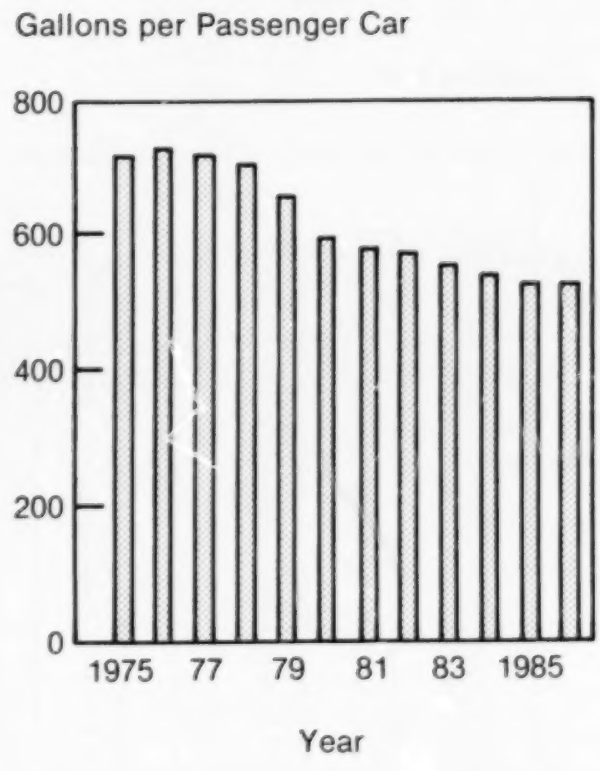
U.S. Average Annual Mileage and Fuel Consumption of Motor Vehicles

Year	Passenger Cars*			All Motor Vehicles*	
	Mileage (thousand) miles)	Fuel Consumption (gallons)	Mileage per Gallon	Mileage (thousand miles)	Fuel Consumption (gallons)
1975	9.7	716	13.5	9.6	790
1976	9.8	723	13.5	9.7	806
1977	9.9	716	13.8	10.0	814
1978	9.8	701	14.0	10.1	816
1979	9.4	653	14.4	9.7	776
1980	9.1	591	15.5	9.5	712
1981	9.2	576	15.9	9.5	697
1982	9.4	566	16.7	9.6	686
1983	9.5	553	17.1	9.8	686
1984	9.6	536	17.8	10.0	691
1985	9.6	525	18.2	10.0	685
1986P	9.6	525	18.3	10.1	690

*Miles, gallons, and miles per gallon are on a per – vehicle basis.
P = Preliminary data.
Source: Energy Information Administration, *Annual Energy Review 1987.*

Average Annual Fuel Consumption and Miles perGallon for Passenger Cars





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U.S. Gross National Product, Population, and Energy Consumption

Year	Gross National Product (billion 1982 dollars)	Population (millions)	Energy Consumption*		
			Total	Per 1982 Dollar of GNP	Per Person
1975	2,695.0	215.5	70.6	26.18	327
1976	2,826.7	217.6	74.4	26.31	342
1977	2,958.6	219.8	76.3	25.79	347
1978	3,115.2	222.1	78.1	25.07	352
1979	3,192.4	224.6	78.9	24.71	351
1980	3,187.1	226.5	76.0	23.83	335
1981	3,248.8	229.6	74.0	22.77	322
1982	3,166.0	232.0	70.8	22.37	305
1983	3,279.1	234.3	70.5	21.50	301
1984	3,501.4	236.5	74.1	21.15	313
1985	3,607.5	238.7	73.9	20.50	310
1986	3,713.3	241.1	74.3	20.00	308
1987P	3,820.3	243.4	76.0	19.90	312

*Total energy consumption is in quadrillion Btu, consumption per 1982 dollar of GNP is in thousand Btu, and consumption per person is in million Btu.

P = Preliminary data.

Note: "Total" may not equal sum of components due to independent rounding.

Source: Population data from U.S. Department of Commerce, Bureau of the Census; all other data from Energy Information Administration, *Annual Energy Review 1987*.

U.S. Energy Consumption per 1982 Dollar of GNP

U.S. Household Consumption, 1984

- The three most popular appliances are the refrigerator, the range, and the television set. These appliances are found in at least 98 percent of all homes.

- The most common type of home-heating equipment in single-family homes is the natural gas forced-air furnace.

- Approximately 60 percent of all homes are air-conditioned.

- The most common conservation feature in single-family homes is ceiling or attic insulation. Nearly 80 percent of all households surveyed have this item.

- Of major appliances used in homes, the automatic dishwasher and microwave oven are the luxury items; 6 percent of households earning less than $5,000 annually use a dishwasher compared to 71 percent usage by households earning $35,000 or more. Use of a microwave oven runs from 7 to 56 percent among income categories.

U.S. Electricity Consumption by Income Group

Income per Household	Kilowatthours per Household
Less than $5,000	5,800
$5,000 to $9,999	6,500
$10,000 to $14,999	7,200
$15,000 to $19,999	7,400
$20,000 to $24,999	8,400
$25,000 to $34,999	9,500
$35,000 or more	11,500

Note: Household is a primary residence.

Source: Energy Information Administration, *Residential Energy Consumption Survey: Housing Characteristics 1984* and *Consumption and Expenditures, April 1984 Through March 1985*.

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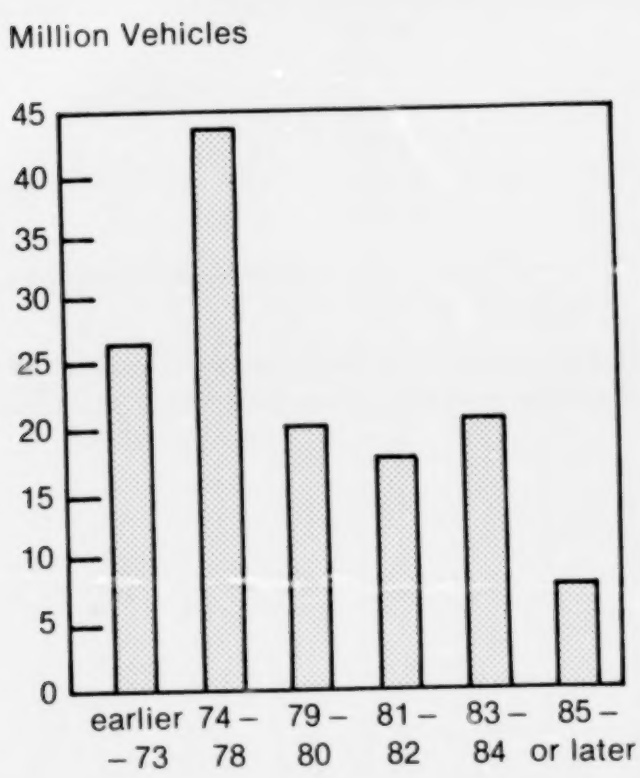
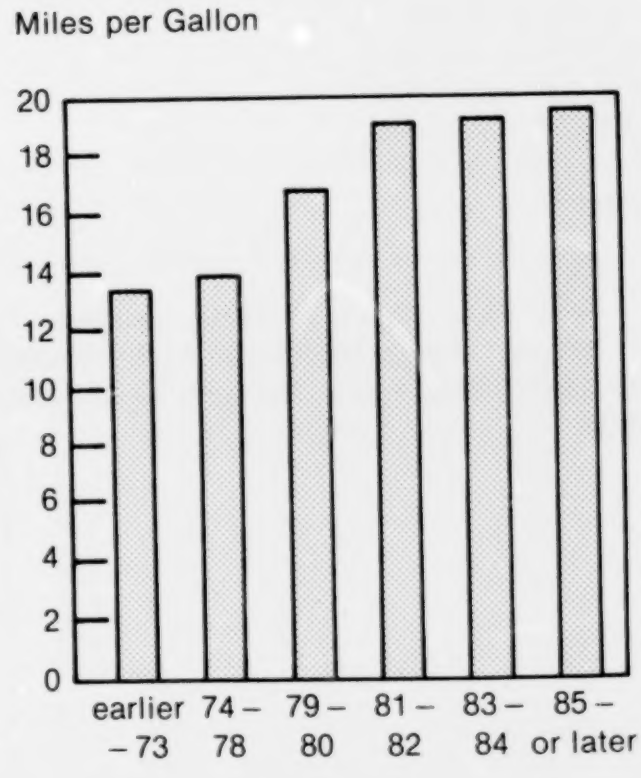
U.S. Motor Fuel Consumption and Expenditures, 1985

Household Characteristics	Number of Households with Vehicles (millions)	Vehicles per House – hold	Annual Average per Household		
			Gallons Consumed	Miles Driven	Expenditures (dollars)
Total	77.7	1.8	1,079	17,402	1,274
Family Income 1985					
Less than $5,000	3.7	1.2	645	9,176	749
$5,000 – $9,999	9.7	1.3	694	10,094	811
$10,000 – $14,999	10.7	1.5	912	13,848	1,068
$15,000 – $19,999	9.7	1.6	929	14,599	1,085
$20,000 – $24,999	9.5	1.8	1,091	17,411	1,286
$25,000 – $34,999	14.7	1.9	1,217	19,741	1,434
$35,000 or more	19.8	2.2	1,406	24,069	1,679

Source: Energy Information Administration, *Residential Transportation Energy Consumption Survey: Consumption Patterns of Household Vehicles, 1985.*

Number of Household Vehicles and Fuel Efficiency by Model Year as of 1985





Major Fuel Consumption in U.S. Commercial Buildings by Principal Building Activity, 1983

Principal Activity Within Building	Square Feet (millions)	Total Consumption (quadrillion Btu) Major Fuels*	Electric-ity	Natural Gas	Fuel Oil
All Buildings	51,280	5.15	2.24	2.23	0.35
Assembly	5,475	.38	.12	.20	.03
Educational	6,044	.48	.16	.25	.06
Food Sales/Service	2,050	.44	.22	.19	**
Health Care	2,277	.47	.15	.22	.03
Lodging	2,241	.37	.15	.17	.02
Mercantile/Services	10,347	.84	.43	.34	.05
Office	8,444	1.04	.52	.37	**
Warehouse	6,700	.51	.21	.25	.03
All other	7,702	.64	.28	.25	.06

*Sum of electricity, natural gas, fuel oil, steam, and LPG.

**Reliable estimate not available.

Source: Energy Information Administration, *Nonresidential Buildings Energy Consumption Survey: Commerical Buildings Consumption and Expenditures, 1983.*

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Manufacturing Sector Energy Consumption for Heat and Power, 1985

Provisional Estimates (Trillion Btu)

SIC Code	Industry Group	All Energy Sources*	Net Electricity**	Fuel Oil***	Natural Gas
20	Food	954.3	165.8	65.1	458.9
21	Tobacco	19.8	4.6	2.3	3.4
22	Textiles	248.1	88.1	21.3	91.2
23	Apparel	32.4	15.3	2.9	12.5
24	Lumber	348.9	55.1	23.4	31.4
25	Furniture	48.6	15.2	2.7	19.6
26	Paper	2,355.6	183.6	166.9	379.7
27	Printing & publishing	98.6	52.5	2.4	40.6
28	Chemicals	2,460.5	445.2	100.3	1,180.9
29	Petroleum	2,426.3	120.3	134.9	690.7
30	Rubber & plastics	220.8	90.7	15.2	102.0
31	Leather	13.4	4.3	3.3	4.5
32	Stone, clay, & glass	927.6	116.3	33.1	397.0
33	Primary metals	2,362.2	458.7	53.2	669.2
34	Metal products	296.2	91.2	16.7	171.6
35	Nonelectric machinery	277.6	114.2	14.6	113.7
36	Electrical equip.	223.7	110.1	10.4	91.4
37	Trans. equip.	322.2	115.0	25.7	120.7
38	Instruments	79.7	29.2	8.1	23.6
39	Misc.	31.3	11.4	2.6	15.4
	Total	**13,747.9**	**2,286.5**	**705.2**	**4,617.7**

*Includes the individual sources shown, and all other sources consumed for heat and power.

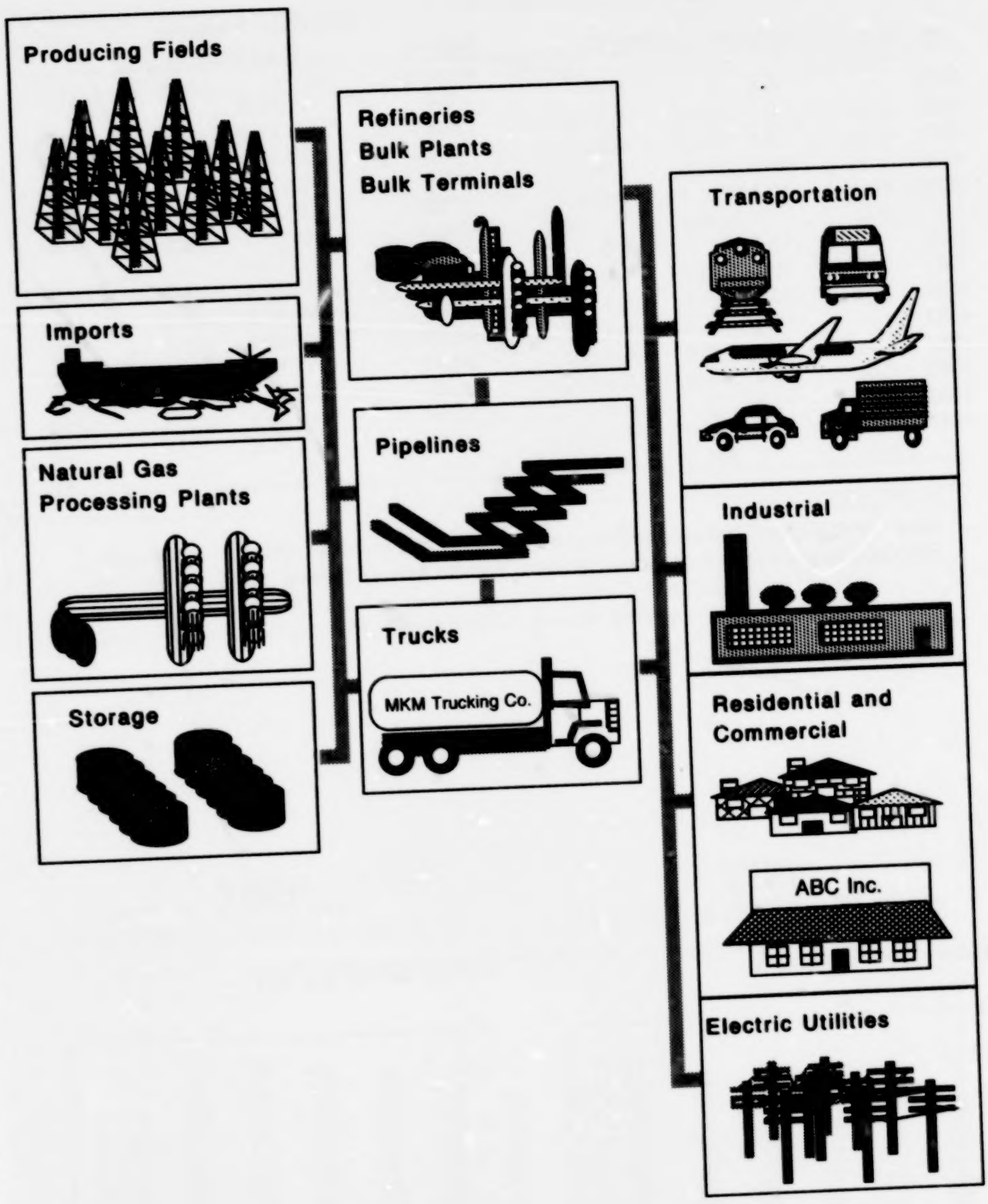
**Includes purchases, plus transfers in, plus generation from noncombustible renewable resources, minus quantities sold and transferred out. Not included is electricity generated onsite.

***Includes distillate and residual.

Notes: Column totals may not equal sum of componenets due to independent rounding. Energy consumed for other than heat and power are not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-846(F), 1985 Manufacturing Energy Consumption Survey.

Petroleum Overview



- World crude oil prices stabilized at the $17 to $18 per barrel range for most of 1987.
- Motor gasoline demand grew by 150,000 barrels per day above the 1986 level, the highest level of motor gasoline consumption since the peak in 1978.
- The number of rotary drilling rigs in operation rose from a low for 1987 of 754 in April to 1,162 by December.

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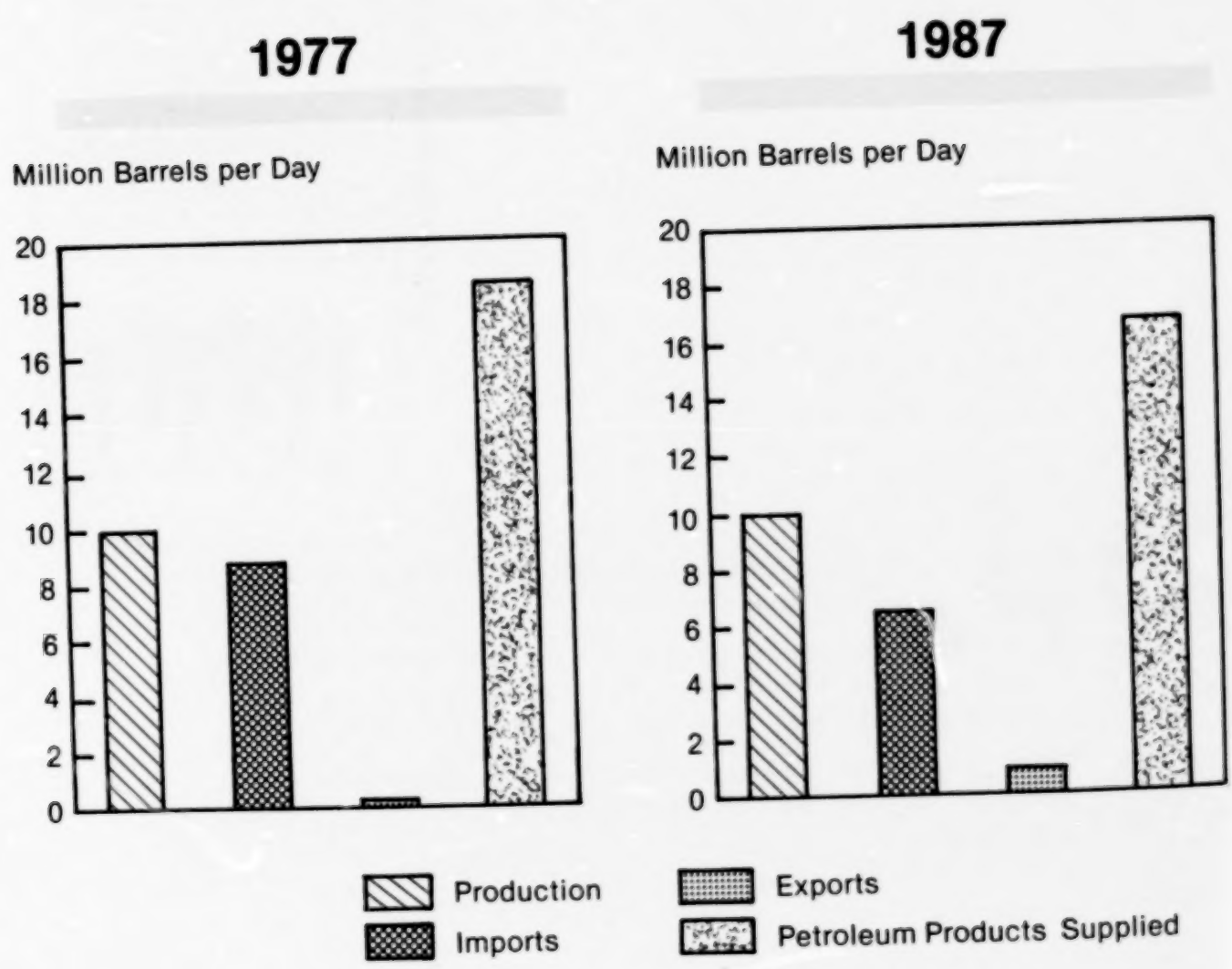
U.S. Petroleum Energy Balance

(Million Barrels per Day)

Year	Production	Imports	Exports	Petroleum Products Supplied
1975	10.0	6.1	0.2	16.3
1976	9.7	7.3	.2	17.5
1977	9.9	8.8	.2	18.4
1978	10.3	8.4	.4	18.9
1979	10.1	8.5	.5	18.5
1980	10.2	6.9	.5	17.1
1981	10.2	6.0	.6	16.1
1982	10.2	5.1	.8	15.3
1983	10.3	5.1	.7	15.2
1984	10.5	5.4	.7	15.7
1985	10.6	5.1	.8	15.7
1986	10.2	6.2	.8	16.3
1987P	9.9	6.5	.8	16.6

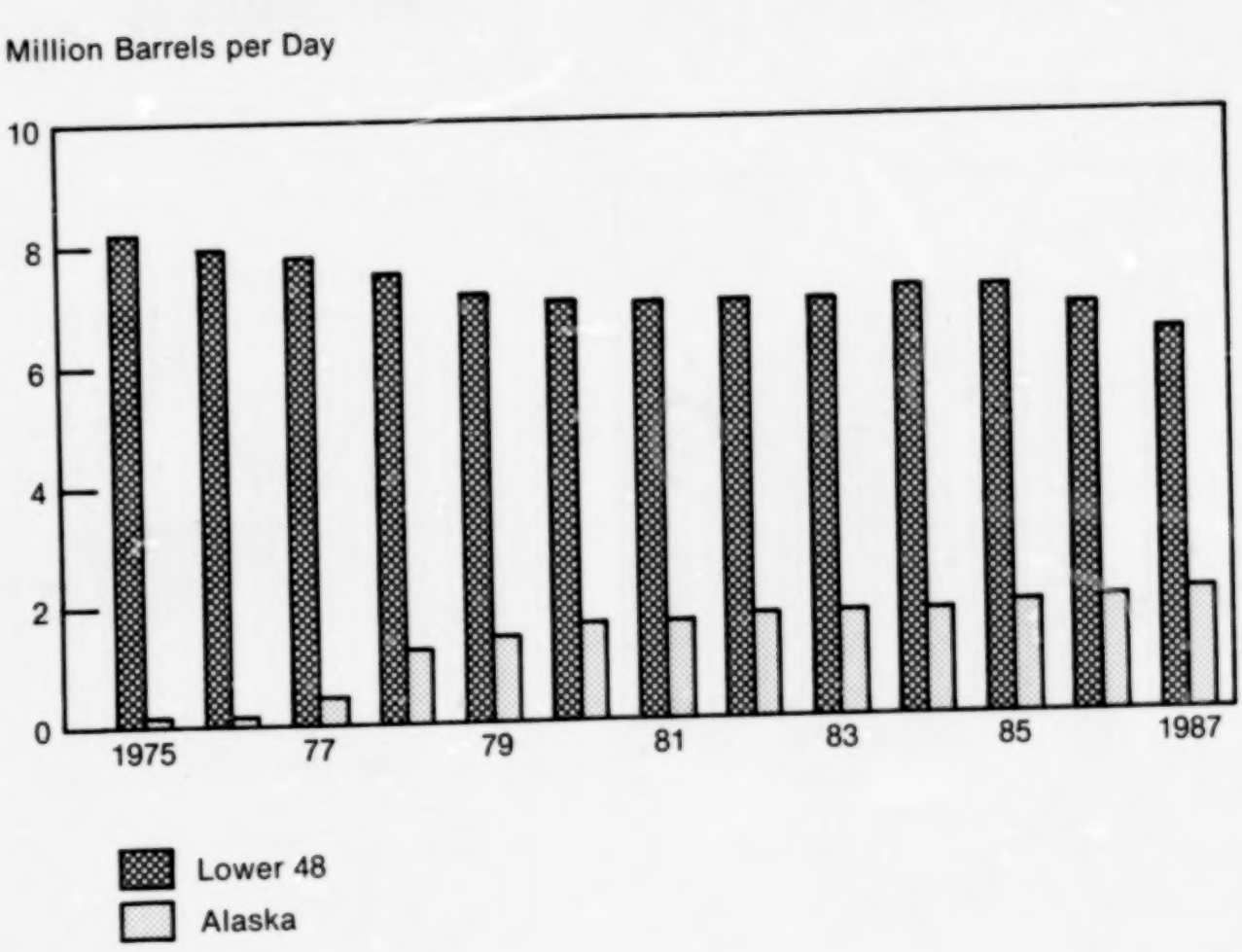
P = Preliminary data.
Note: "Production" includes output of natural gas plant liquids.
Source: Energy Information Administration, *Annual Energy Review 1987.*



U.S. Crude Oil Production
(Thousand Barrels per Day, Except as Noted)

Year	Location		Site		Total Crude Oil Production	Average Productivity*
	Lower 48	Alaska	Onshore	Offshore		
1975	8,183	191	7,012	1,362	8,375	16.8
1976	7,958	173	6,868	1,264	8,132	16.3
1977	7,781	464	7,069	1,176	8,245	16.4
1978	7,478	1,229	7,571	1,136	8,707	17.0
1979	7,151	1,401	7,485	1,067	8,552	16.3
1980	6,980	1,617	7,562	1,034	8,597	15.9
1981	6,962	1,609	7,537	1,034	8,572	15.4
1982	6,953	1,696	7,538	1,110	8,649	14.9
1983	6,974	1,714	7,492	1,196	8,688	14.4
1984	7,157	1,722	7,596	1,283	8,879	14.3
1985	7 146	1,825	7,722	1,250	8,971	13.9
1986	6,814	1,867	7,426	1,254	8,680	13.9
1987P	6,349	1,961	NA	NA	8,311	13.4

*Barrels per day, per well.
NA = Not available. P = Preliminary data.
Note: Crude oil production includes lease condensate production.
Source: Energy Information Administration, *Annual Energy Review 1987*.



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U.S. Imports, Exports, and Net Imports of Crude Oil and Petroleum Products

(Thousand Barrels per Day)

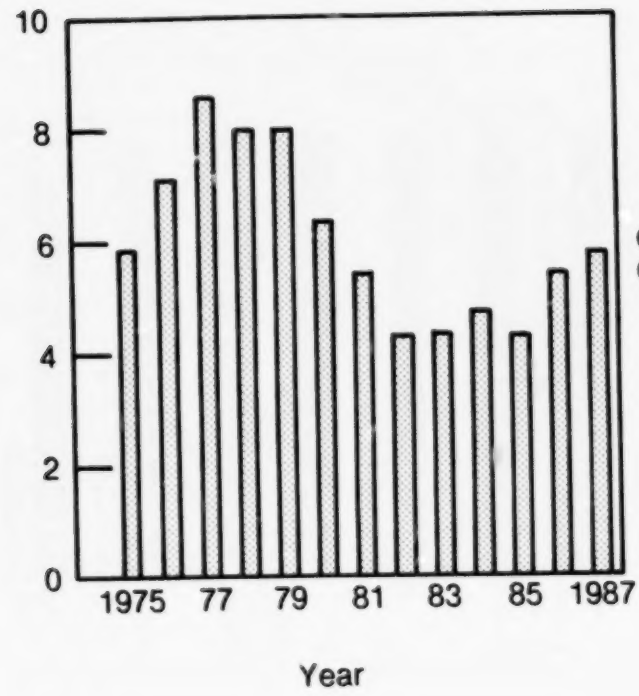
Year	OPEC		Non – OPEC			Total Imports	Total Exports	Net Imports
	Arab	Total	Canada	Mexico	Total			
1975	1,383	3,601	846	71	2,455	6,056	209	5,846
1976	2,424	5,066	599	87	2,247	7,313	223	7,090
1977	3,185	6,193	517	179	2,614	8,807	243	8,565
1978	2,963	5,751	467	318	2,612	8,363	362	8,002
1979	3,056	5,637	538	439	2,819	9,456	471	7,985
1980	2,551	4,300	455	533	2,609	6,909	544	6,365
1981	1,848	3,323	447	522	2,673	5,996	595	5,401
1982	854	2,146	482	685	2,967	5,113	815	4,298
1983	632	1,862	547	826	3,189	5,051	739	4,312
1984	819	2,049	630	748	3,388	5,437	722	4,715
1985	472	1,830	770	816	3,237	5,067	781	4,286
1986	1,162	2,837	807	699	3,387	6,224	785	5,439
1987P	1,255	2,994	837	645	3,547	6,541	773	5,767

P = Preliminary data.

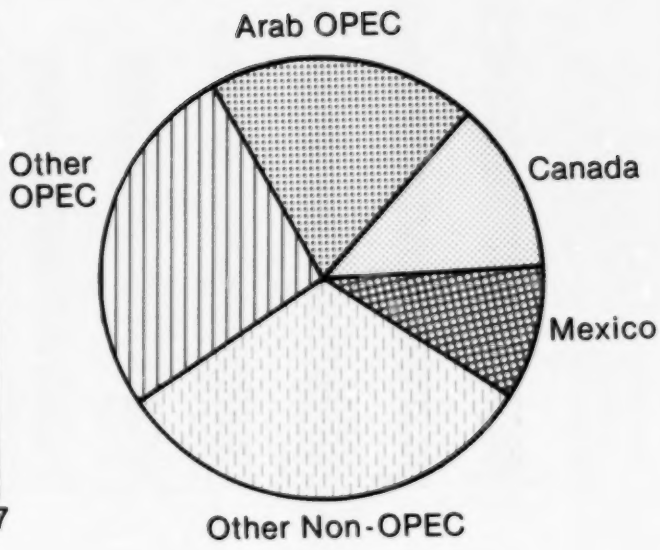
Note: "Net Imports" may not equal difference between "Total Imports" and "Total Exports" due to independent rounding.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Net Imports



1987 Imports



U.S. Petroleum Products Supplied to End – Use Sectors

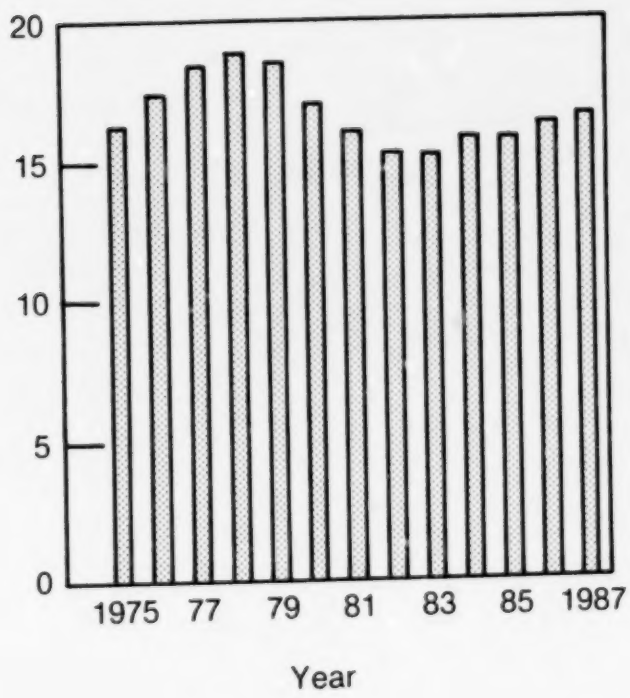
(Million Barrels per Day)

Year	Residential/ Commercial	Industrial	Transportation	Electric Utilities	Total
1975	1.95	4.04	8.95	1.39	**16.32**
1976	2.12	4.45	9.37	1.52	**17.46**
1977	2.14	4.83	9.75	1.71	**18.43**
1978	2.07	4.88	10.14	1.75	**18.85**
1979	1.73	5.35	10.00	1.44	**18.51**
1980	1.52	4.84	9.55	1.15	**17.06**
1981	1.33	4.28	9.48	.96	**16.06**
1982	1.24	4.06	9.30	.69	**15.30**
1983	1.29	3.85	9.41	.68	**15.23**
1984	1.34	4.10	9.72	.56	**15.73**
1985	1.35	4.01	9.88	.48	**15.73**
1986	1.35	4.07	10.22	.64	**16.28**
1987P	1.37	4.22	10.42	.55	**16.56**

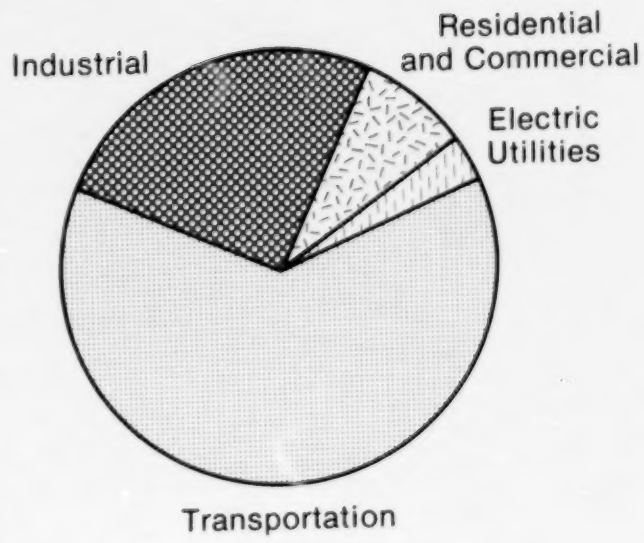
P = Preliminary data.
Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Supplied

Million Barrels per Day



1987 Distribution



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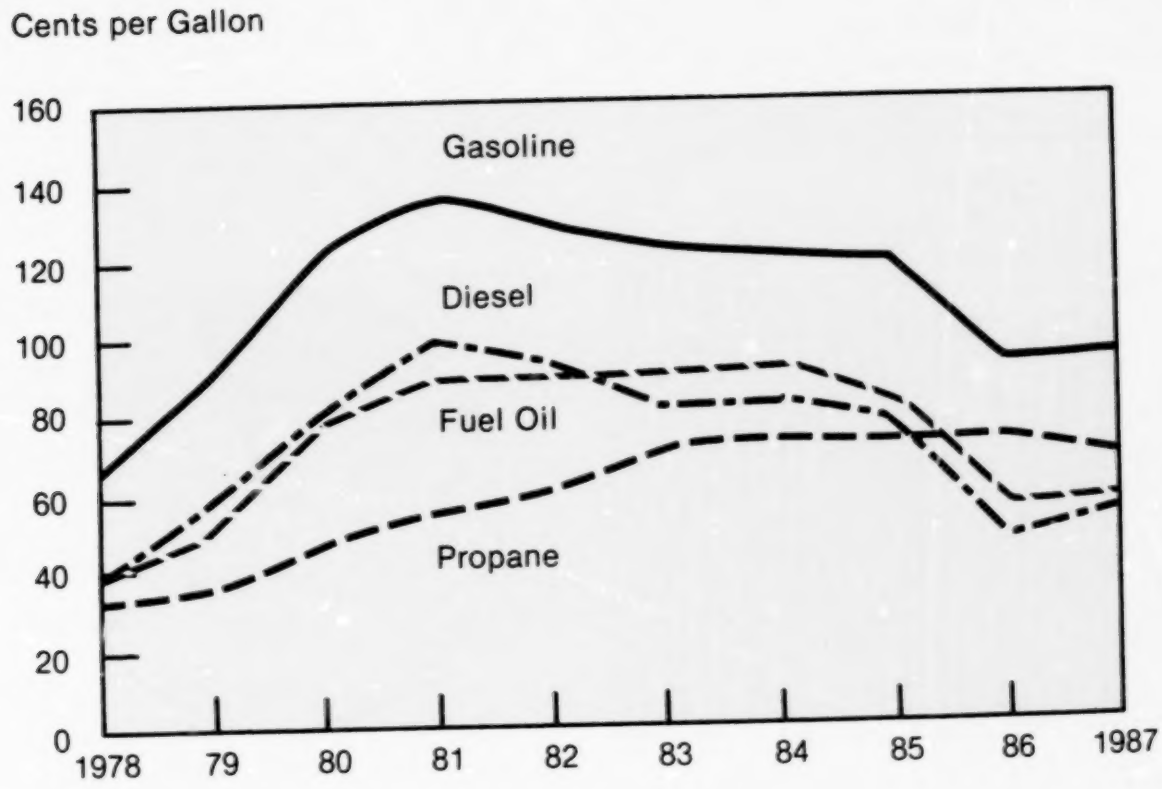
U.S. Average Prices of Selected Petroleum Products

(Cents per Gallon)

Year	U.S. City Average	Refiner and Gas Plant Operator Sales Prices to End Users			
	Unleaded Regular Gasoline (includes tax)	Kerosene	No.2 Fuel Oil (excludes tax)	No.2 Diesel	Propane
1978	67.0	42.1	40.0	37.7	33.5
1979	90.3	58.5	51.6	58.5	35.7
1980	124.5	90.2	78.8	81.8	48.2
1981	137.8	112.3	91.4	99.5	56.5
1982	129.6	108.9	90.5	94.2	59.2
1983	124.1	96.1	91.6	82.6	70.9
1984	121.2	103.6	91.6	82.3	73.7
1985	120.2	103.0	84.9	78.9	71.7
1986	92.7	79.0	56.0	47.8	74.5
1987	94.8	76.9	58.1	54.9	70.0

Note: Gasoline prices include all Federal, State, and local taxes paid at time of sale. Sales to end users are made directly to the ultimate consumer, including such bulk customers as agriculture, industry, and utilities, as well as residential and commercial customers. Propane is consumer grade.

Source: "U.S. City Average Unleaded Gasoline" data from Energy Information Administration, *Monthly Energy Review,* December 1987. All other data from *Petroleum Marketing Monthly*, December 1987.

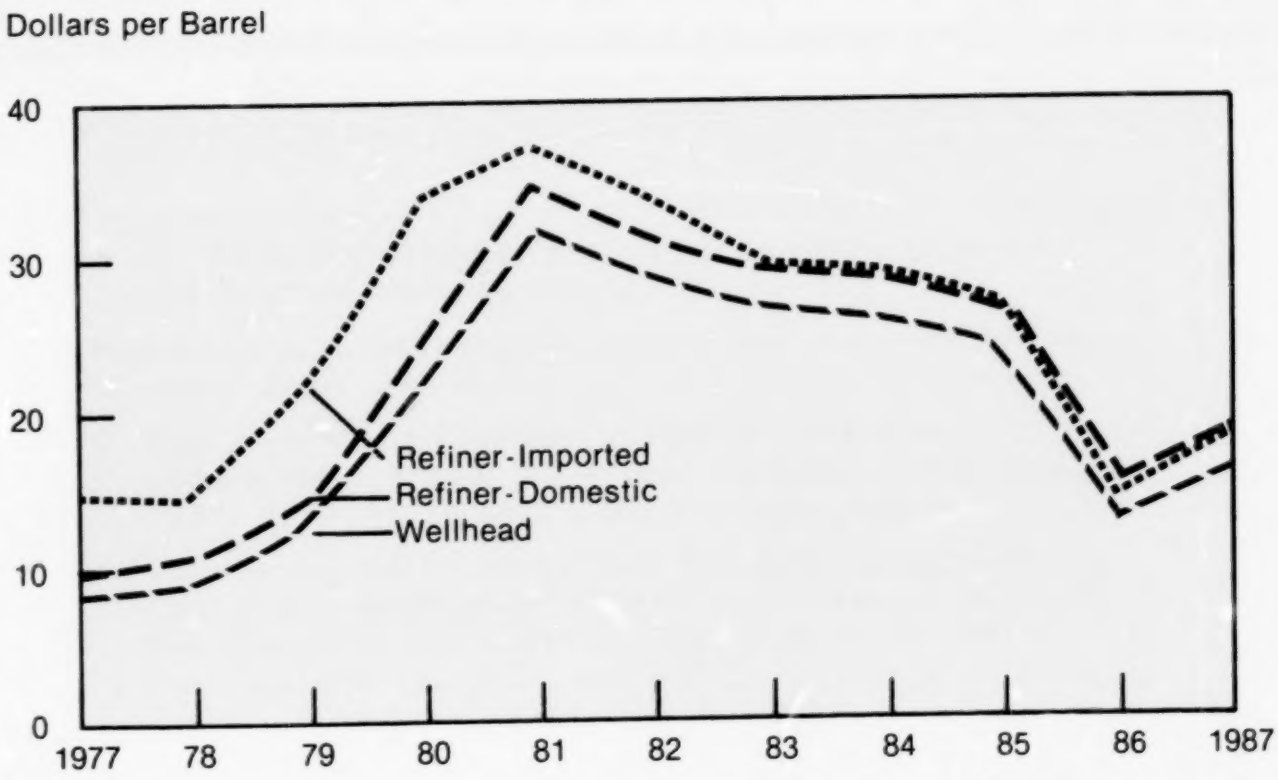


U.S. Crude Oil Price Summary

(Dollars per Barrel)

Year	Domestic First Purchase Price	Refiner Acquistion Cost		
		Domestic	Imported	Composite
1977	8.57	9.55	14.53	11.96
1978	9.00	10.61	14.57	12.46
1979	12.64	14.27	21.67	17.72
1980	21.59	24.23	33.89	28.07
1981	31.77	34.33	37.05	35.24
1982	28.52	31.22	33.55	31.87
1983	26.19	28.87	29.30	28.99
1984	25.88	28.53	28.88	28.63
1985	24.09	26.66	26.99	26.75
1986	12.51	14.82	14.00	14.55
1987P	15.41	17.77	18.15	17.91

P = Preliminary data.
Source: Energy Information Administration, *Monthly Energy Review*, December 1987.



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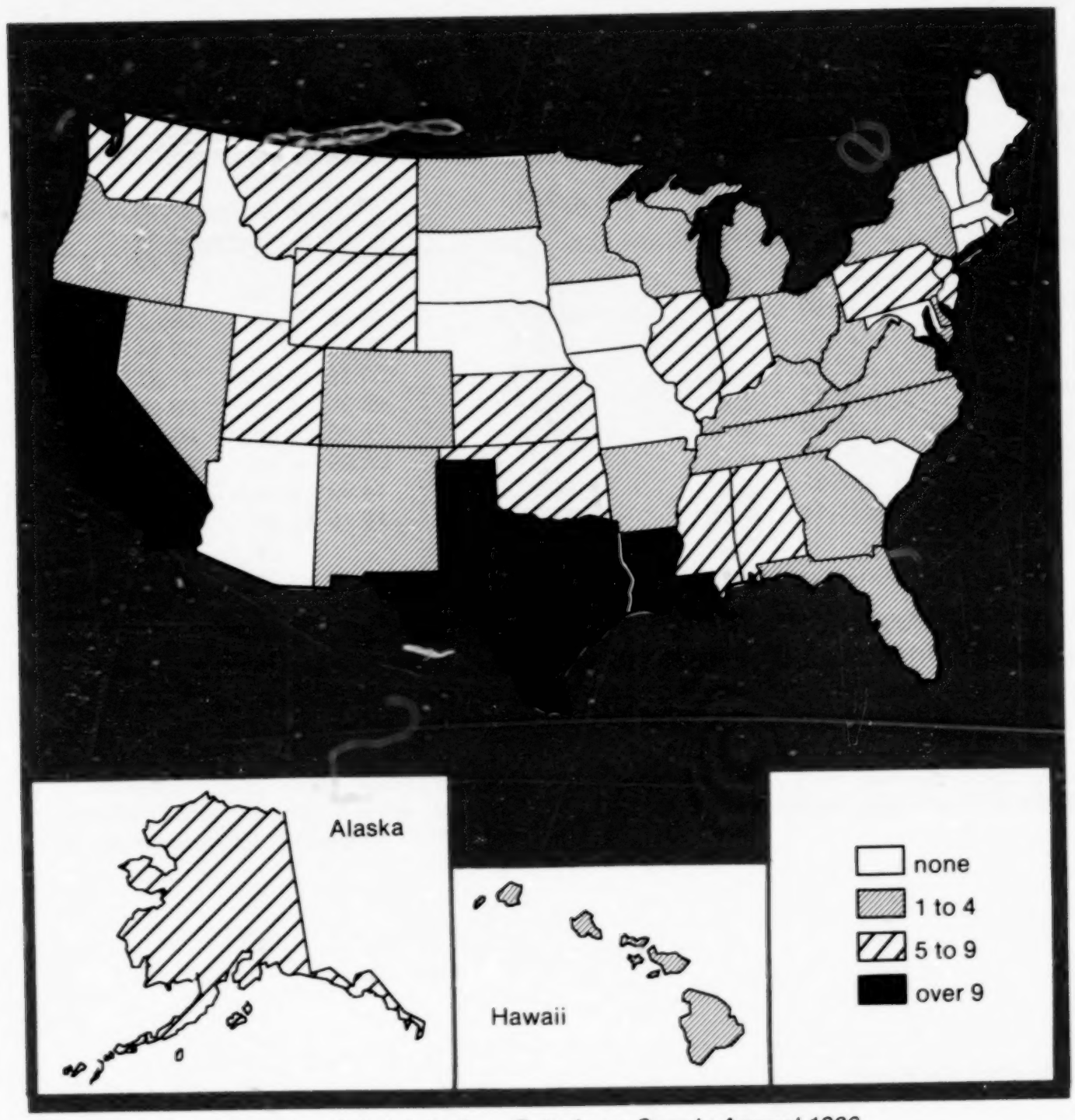
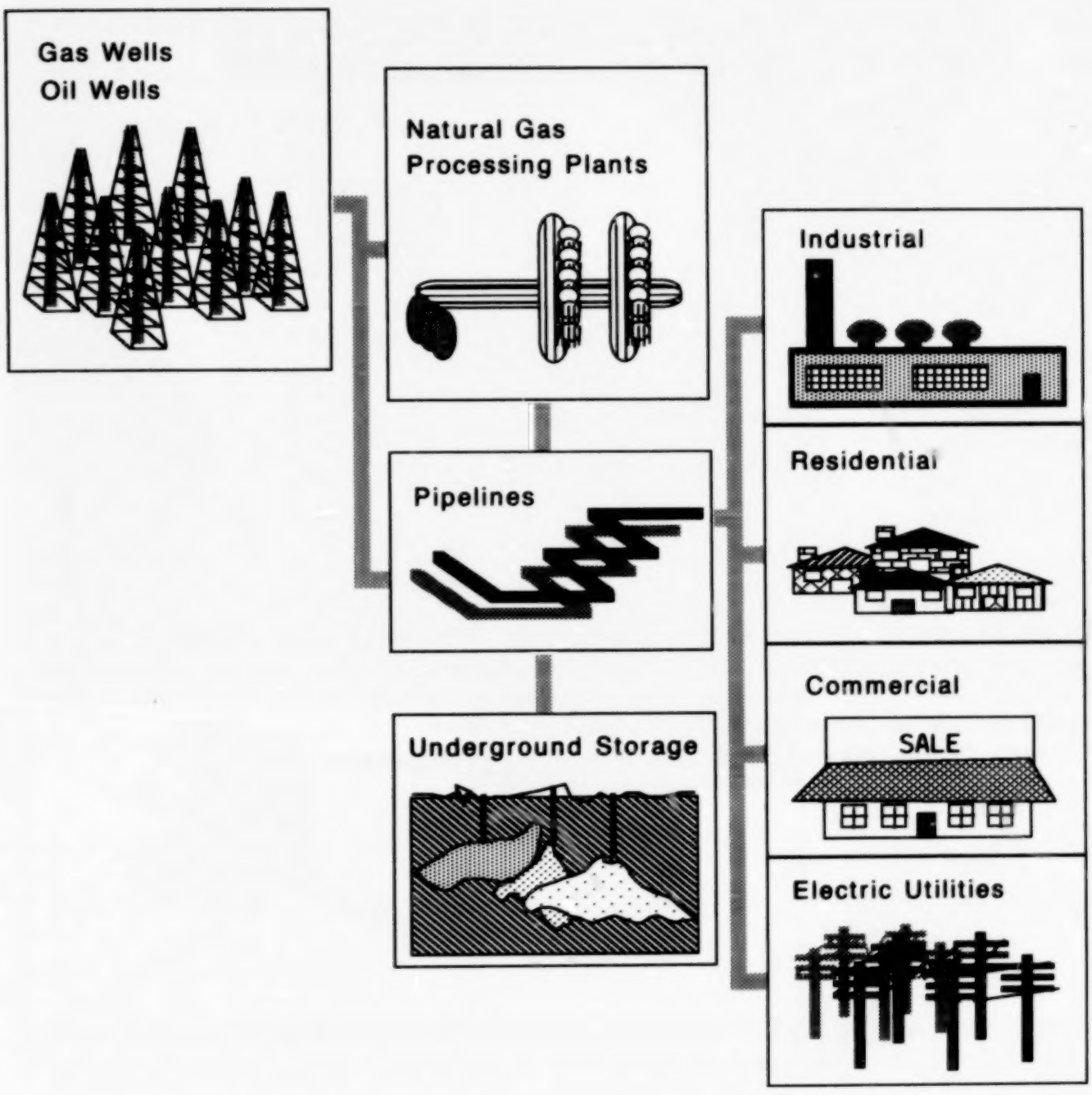
Operable Petroleum Refineries as of January 1, 1987



Source: Energy Information Administration, *Petroleum Supply Annual 1986*.

Natural Gas Overview



- In 1987, the demand for natural gas increased, but the average price declined.
- The largest increases of natural gas consumption were reported by industrial users and electric utilities.
- The price of natural gas to local distribution companies averaged $2.87 per thousand cubic feet in 1987, down 11 percent from the 1986 level.
- The average price of natural gas sold to residential consumers declined only about 5 percent, from $5.83 per thousand cubic feet in 1986 to $5.56 in 1987.

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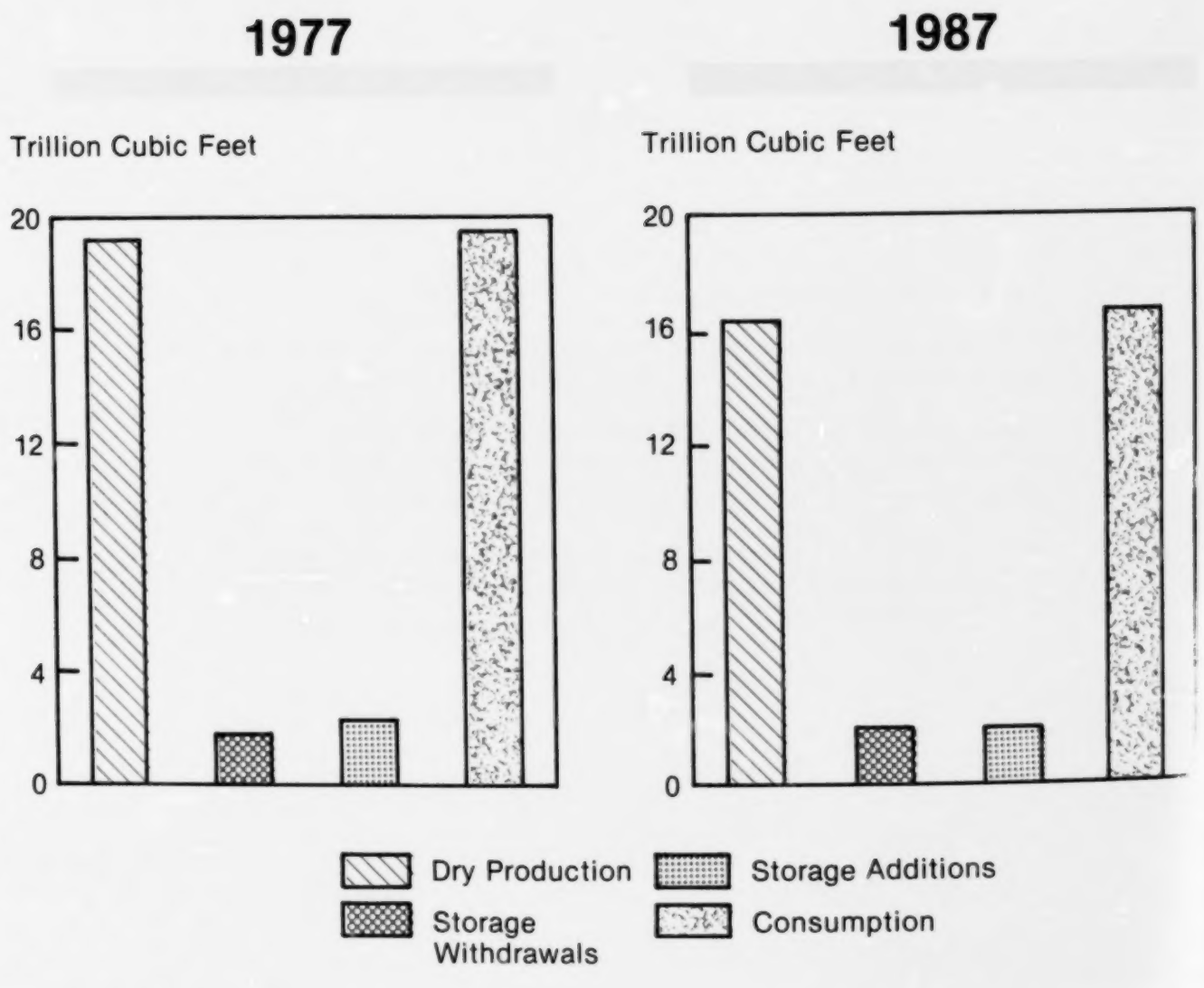
U.S. Natural Gas Energy Balance
(Trillion Cubic Feet)

Year	Dry Production	Storage Withdrawals	Storage Additions	Consumption
1975	19.2	1.8	2.1	19.5
1976	19.1	1.9	1.8	20.0
1977	19.2	1.8	2.3	19.5
1978	19.1	2.2	2.3	19.6
1979	19.7	2.1	2.3	20.2
1980	19.4	2.0	2.0	19.9
1981	19.2	1.9	2.2	19.4
1982	17.8	2.2	2.5	18.0
1983	16.0	2.3	1.8	16.8
1984	17.4	2.1	2.3	18.0
1985	16.4	2.4	2.2	17.3
1986	16.0	1.8	2.0	16.2
1987P	16.4	2.0	2.0	16.7

P = Preliminary data.

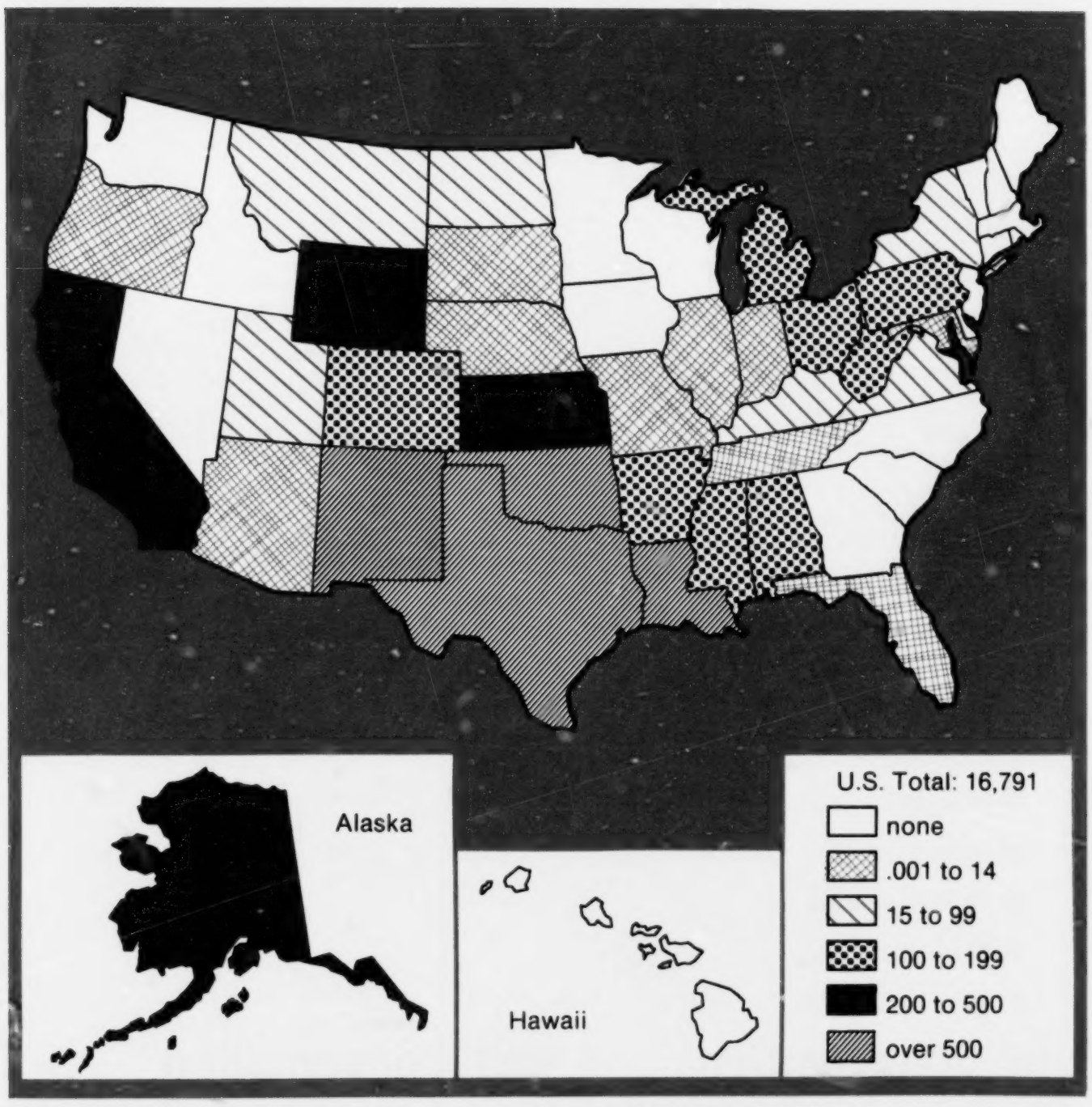
Note: The sum of "Dry Production" and "Storage Withdrawals" less "Storage Additions" does not equal "Consumption" due to imports, supplemental gaseous fuels, exports, and lost and unaccounted for gas. During the 1975 – 1987 interval, average imports were 1 trillion cubic feet, and average exports were less than 60 billion cubic feet.

Source: Energy Information Administration, *Annual Energy Review 1987*.



Marketed Production of Natural Gas, 1986

(Billion Cubic Feet)



Source: Energy Information Administration, *Natural Gas Annual 1986.*

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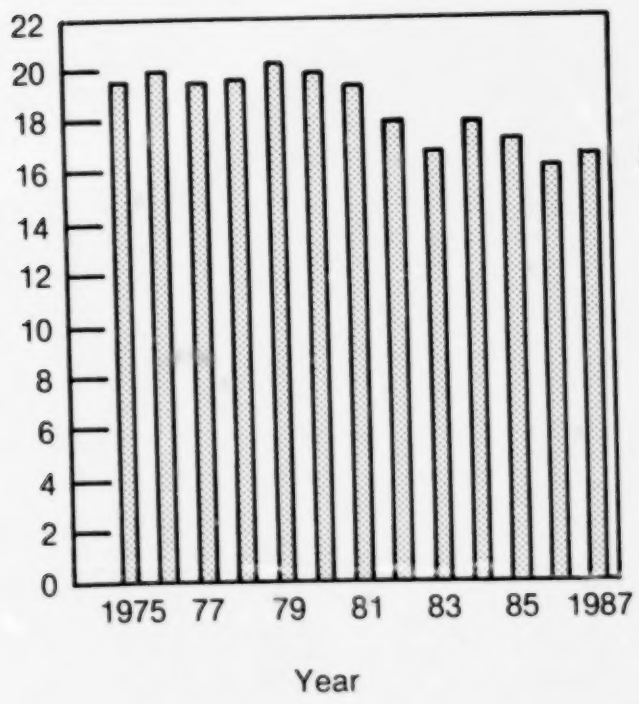
U.S. Natural Gas Consumption
(Trillion Cubic Feet)

Year	Residential	Commercial	Industrial	Electric Utilities	Trans – portation	Total
1975	4.92	2.51	8.36	3.16	0.58	**19.54**
1976	5.05	2.67	8.60	3.08	.55	**19.95**
1977	4.82	2.50	8.47	3.19	.53	**19.52**
1978	4.90	2.60	8.40	3.19	.53	**19.63**
1979	4.97	2.79	8.40	3.49	.60	**20.24**
1980	4.75	2.61	8.20	3.68	.63	**19.88**
1981	4.55	2.52	8.06	3.64	.64	**19.40**
1982	4.63	2.61	6.94	3.23	.60	**18.00**
1983	4.38	2.43	6.62	2.91	.49	**16.83**
1984	4.56	2.52	7.23	3.11	.53	**17.95**
1985	4.43	2.43	6.87	3.04	.50	**17.28**
1986	4.31	2.32	6.50	2.60	.49	**16.22**
1987P	4.37	2.29	6.68	2.84	.50	**16.68**

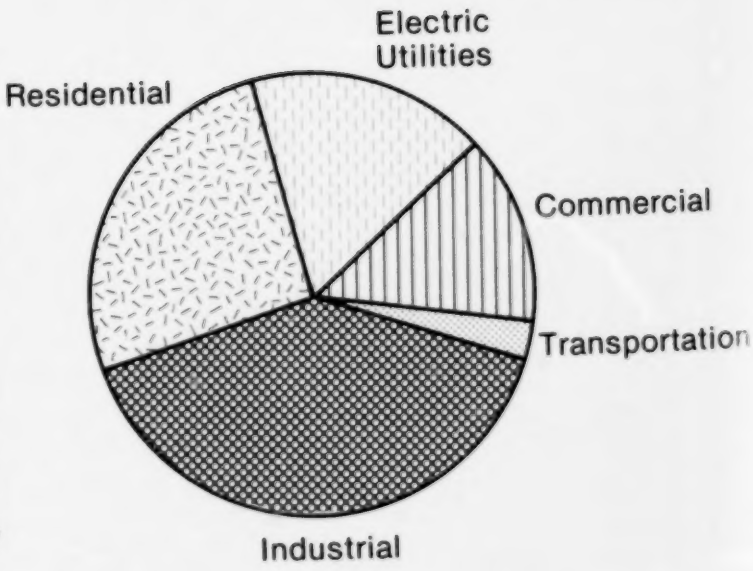
P = Preliminary data.
Note: "Total" may not equal sum of components due to independent rounding.
Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Consumption

Trillion Cubic Feet

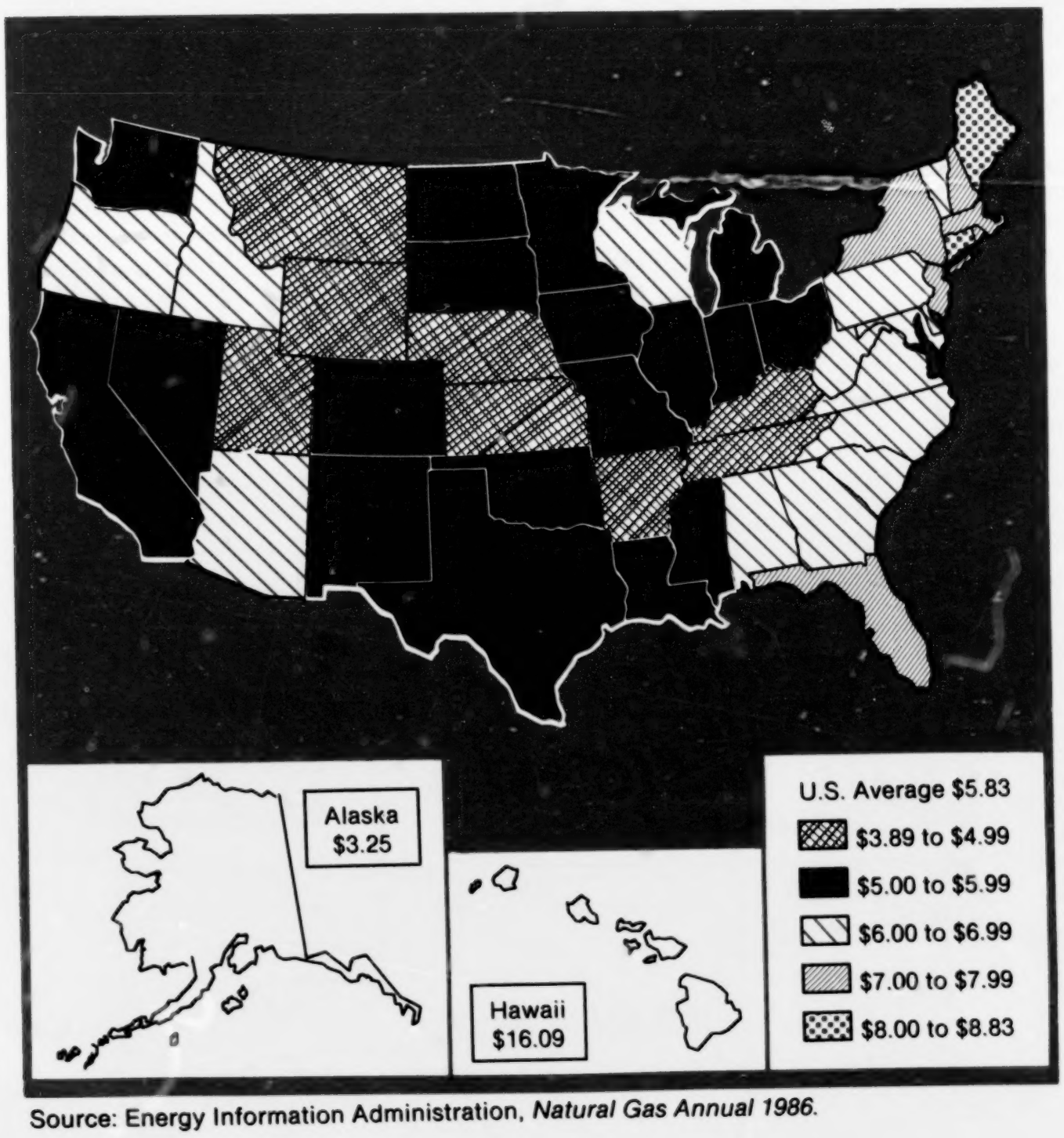


1987 Consumption



Average Price of Natural Gas to Residential Consumers in 1986

(Dollars per Thousand Cubic Feet)



Source: Energy Information Administration, *Natural Gas Annual 1986*.

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U.S. Average Price of Natural Gas to End Users

(Dollars per Thousand Cubic Feet)

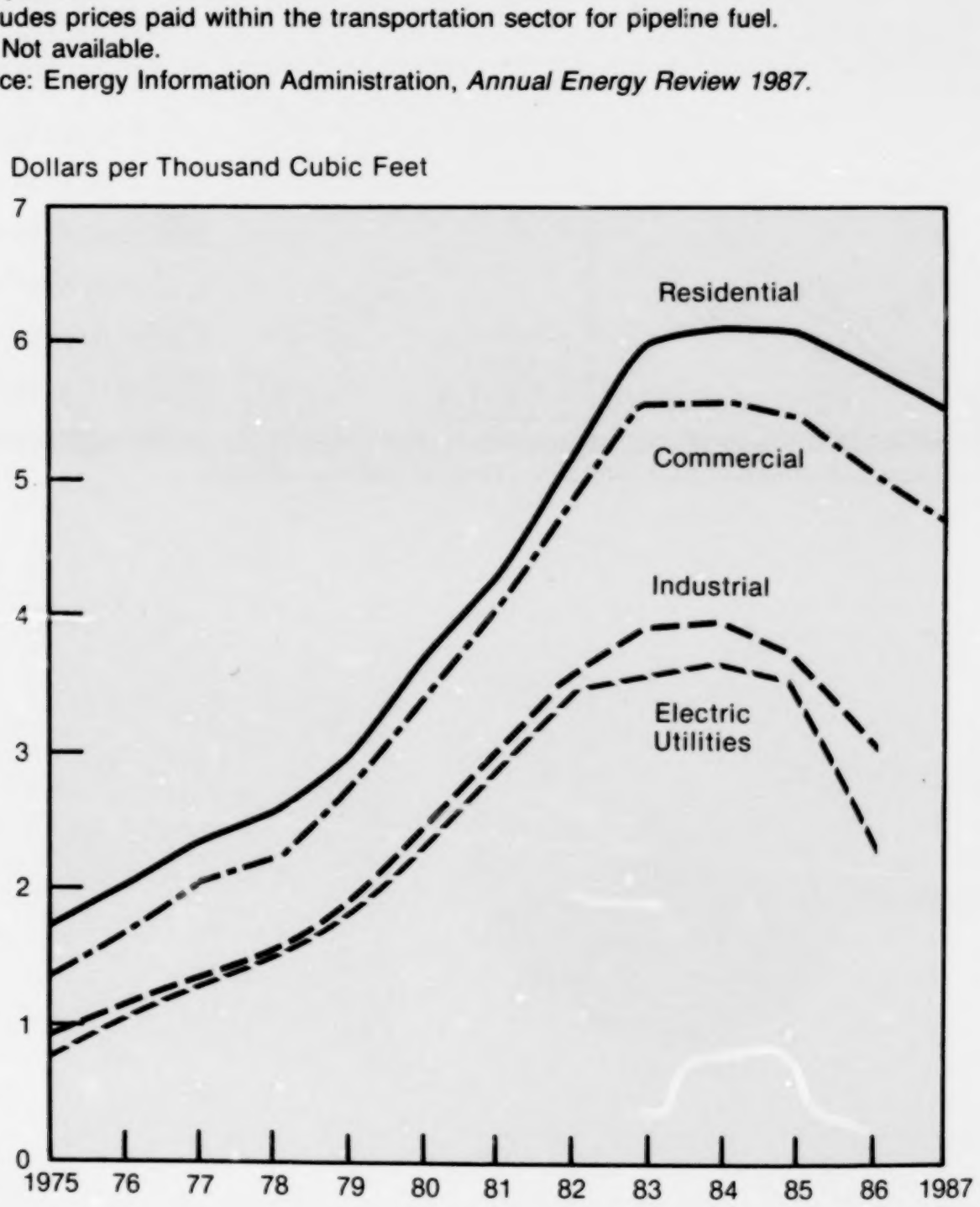
Year	Residential	Commercial*	Industrial	Electric Utilities	Average**
1975	1.71	1.35	0.88	0.77	1.12
1976	1.98	1.64	1.11	1.06	1.38
1977	2.35	2.04	1.34	1.32	1.66
1978	2.56	2.23	1.52	1.48	1.85
1979	2.98	2.73	1.82	1.81	2.21
1980	3.68	3.39	2.42	2.27	2.80
1981	4.29	4.00	3.00	2.89	3.39
1982	5.17	4.82	3.61	3.48	4.15
1983	6.06	5.59	3.94	3.58	4.64
1984	6.12	5.55	3.99	3.70	4.67
1985	6.12	5.50	3.73	3.55	4.54
1986	5.83	5.08	3.06	2.43	3.97
1987	5.56	4.76	NA	NA	NA

*Includes deliveries to municipalities and public authorities for institutional heating and other purposes.

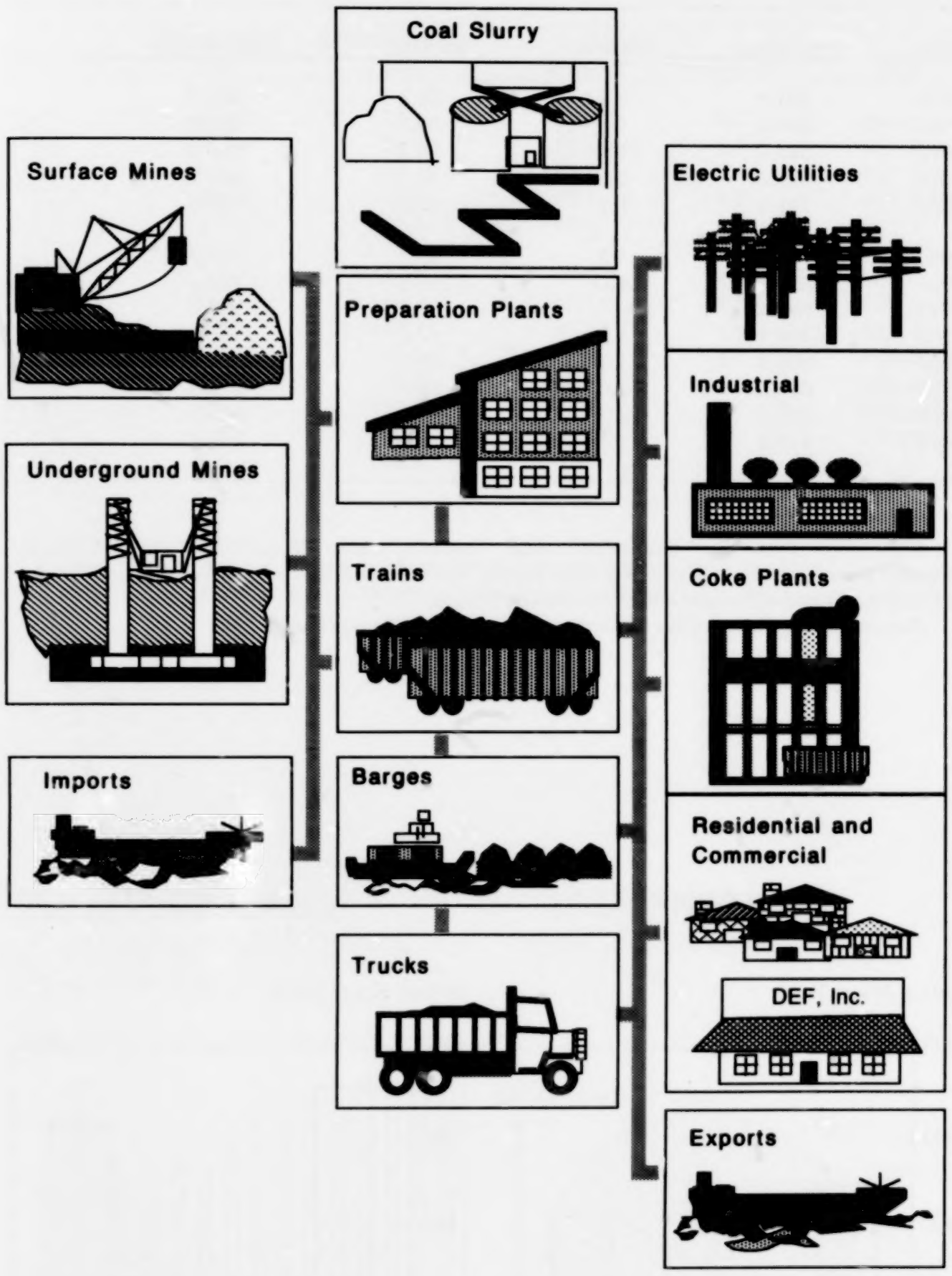
**Includes prices paid within the transportation sector for pipeline fuel.

NA = Not available.

Source: Energy Information Administration, *Annual Energy Review 1987*.



Coal Overview



- The coal industry increased production by 3 percent in 1987, setting a new record of 917 million short tons.
- Coal accounted for 55 percent of the energy that was consumed by electric utilities in 1987.
- Coal exports in 1987 totaled 80 million short tons, 7 percent less than exports in 1986.
- Total 1987 coal imports were 1.7 million short tons, 21 percent lower than the 2.2 million short tons imported in 1986.

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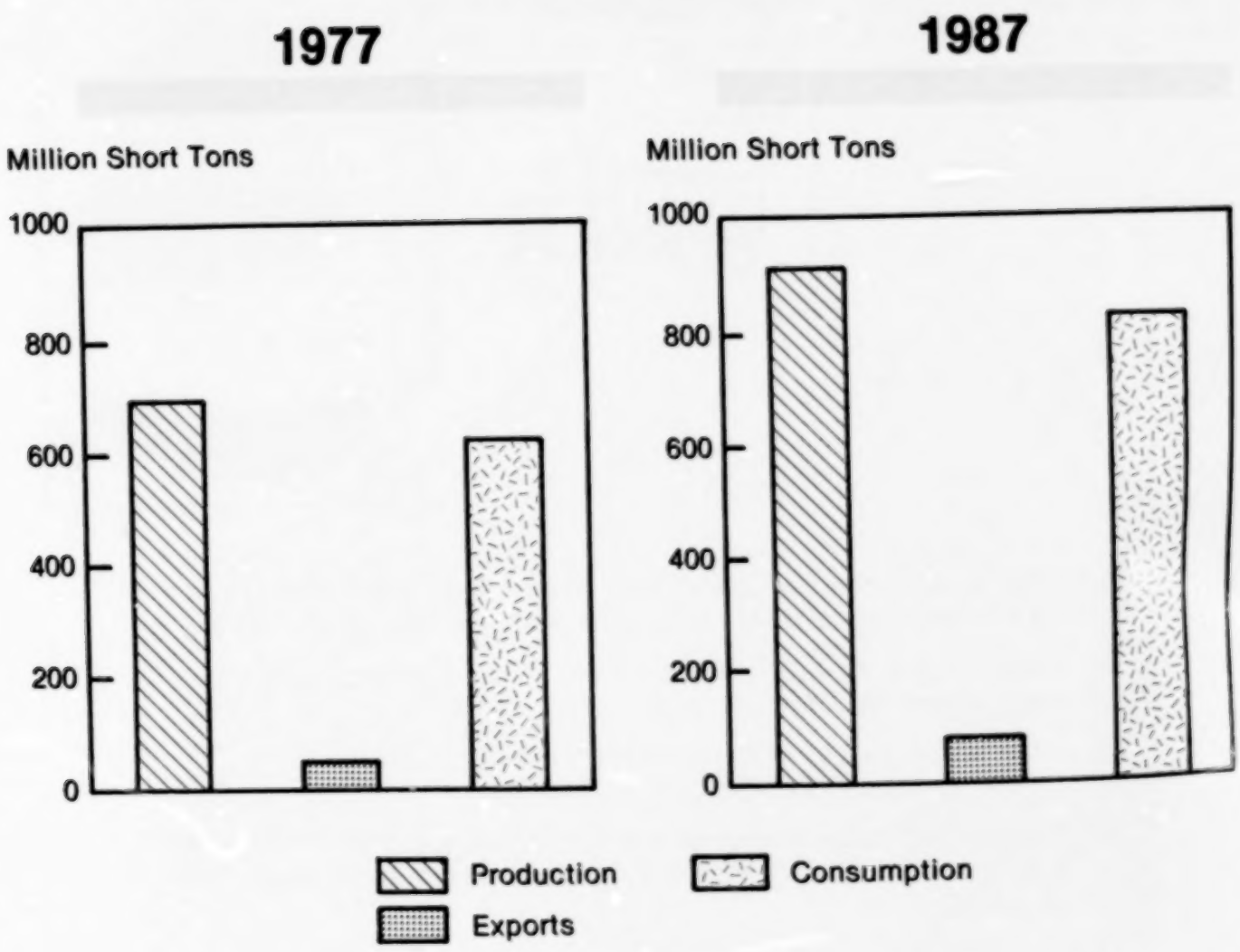
U.S. Coal Energy Balance
(Million Short Tons)

Year	Production	Imports	Exports	Consumption
1975	654.6	0.9	66.3	562.6
1976	684.9	1.2	60.0	603.8
1977	697.2	1.6	54.3	625.3
1978	670.2	3.0	40.7	625.2
1979	781.1	2.1	66.0	680.5
1980	829.7	1.2	91.7	702.7
1981	823.8	1.0	112.5	732.6
1982	838.1	.7	106.3	706.9
1983	782.1	1.3	77.8	736.7
1984	895.9	1.3	81.5	791.3
1985	883.6	2.0	92.7	818.0
1986	890.3	2.2	85.5	804.3
1987P	916.9	1.7	79.6	835.9

P = Preliminary data.

Note: The sum of "Production" and "Imports" less "Exports" does not equal "Consumption" due to changes in stocks, losses, unaccounted for coal, and small quantities of anthracite shipped overseas to the U.S. Armed Forces.

Source: Energy Information Administration, *Annual Energy Review 1987*.



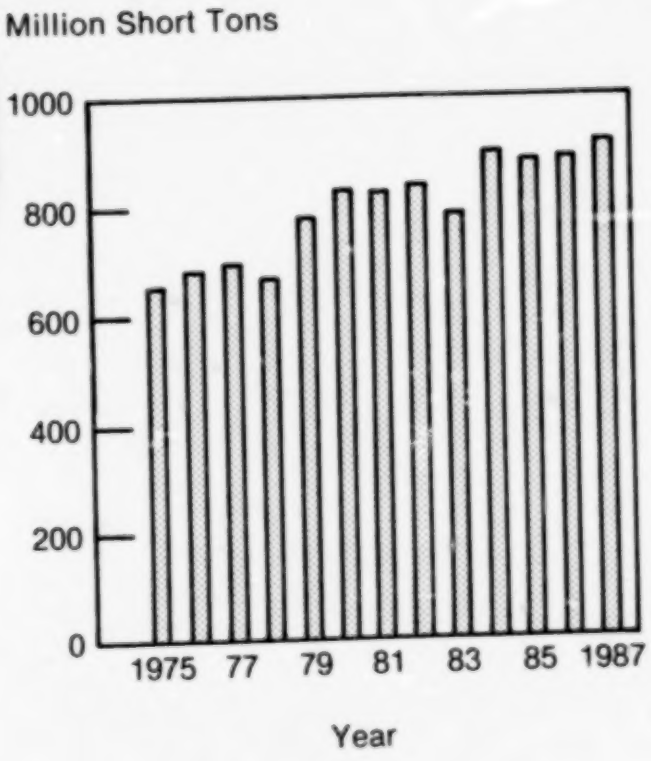
Note: Imports in 1977 and 1987 were too small to be graphically represented.

U.S. Coal Production
(Million Short Tons)

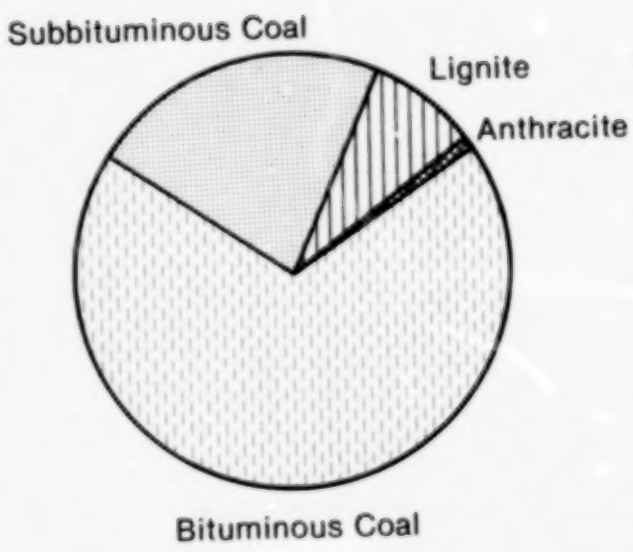
Year	Bituminous Coal	Subbituminous Coal	Lignite	Anthracite	Total
1975	577.5	51.1	19.8	6.2	**654.6**
1976	588.4	64.8	25.5	6.2	**684.9**
1977	581.0	82.1	28.2	5.9	**697.2**
1978	534.0	96.8	34.4	5.0	**670.2**
1979	612.3	121.5	42.5	4.8	**781.1**
1980	628.8	147.7	47.2	6.1	**829.7**
1981	608.0	159.7	50.7	5.4	**823.8**
1982	620.2	160.9	52.4	4.6	**838.1**
1983	568.6	151.0	58.3	4.1	**782.1**
1984	649.5	179.2	63.1	4.2	**895.9**
1985	613.9	192.7	72.4	4.7	**883.6**
1986	620.1	189.6	76.4	4.3	**890.3**
1987P	635.9	198.9	77.9	4.2	**916.9**

P = Preliminary data.
Note: "Total" may not equal sum of components due to independent rounding.
Source: Energy Information Administration, *Annual Energy Review 1987*.

Total Production



1987 Production



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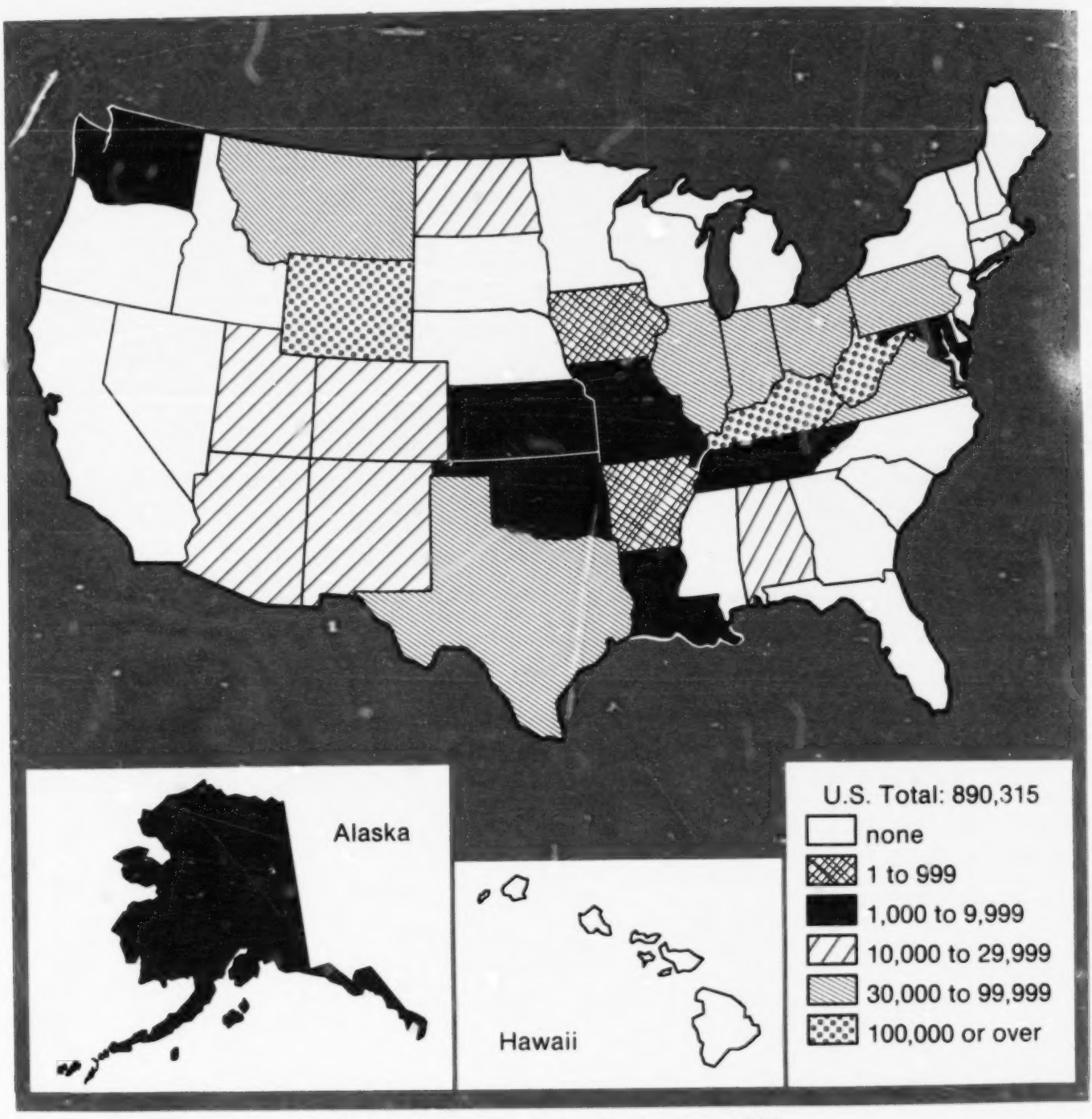
Coal Production in 1986

(Thousand Short Tons)



Source: Energy Information Administration, *Coal Production 1986*.

U.S. Coal Consumption by End-Use Sector
(Million Short Tons)

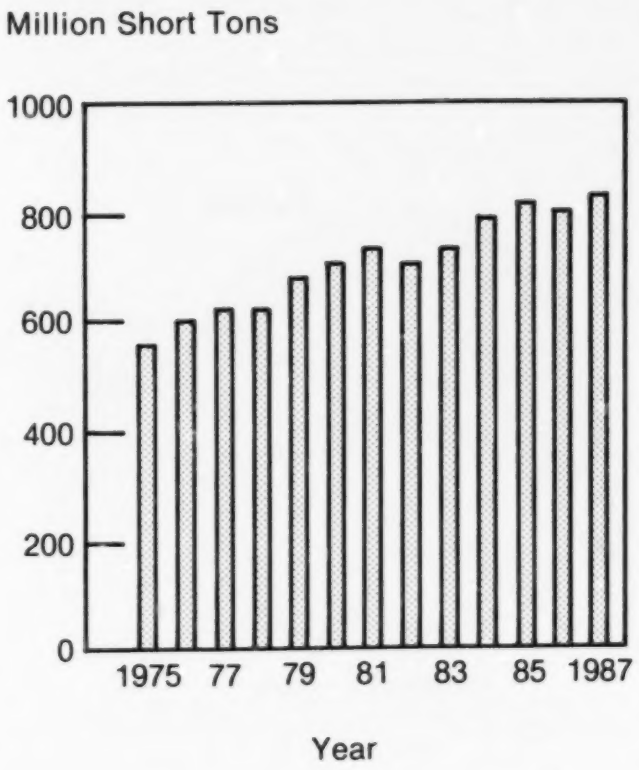
Year	Electric Utilities	Industrial: Coke Plants	Industrial: Other*	Residential/ Commercial	Total
1975	406.0	83.6	63.6	9.4	**562.6**
1976	448.4	84.7	61.8	8.9	**603.8**
1977	477.1	77.7	61.5	9.0	**625.3**
1978	481.2	71.4	63.1	9.5	**625.2**
1979	527.1	77.4	67.7	8.4	**680.5**
1980	569.3	66.7	60.3	6.5	**702.7**
1981	596.8	61.0	67.4	7.4	**732.6**
1982	593.7	40.9	64.1	8.2	**706.9**
1983	625.2	37.0	66.0	8.4	**736.7**
1984	664.4	44.0	73.7	9.1	**791.3**
1985	693.8	41.1	75.4	7.8	**818.0**
1986	685.1	36.0	75.6	7.7	**804.3**
1987P	718.0	36.4	74.5	7.0	**835.9**

*"Other Industrial" includes transportation and miscellaneous.

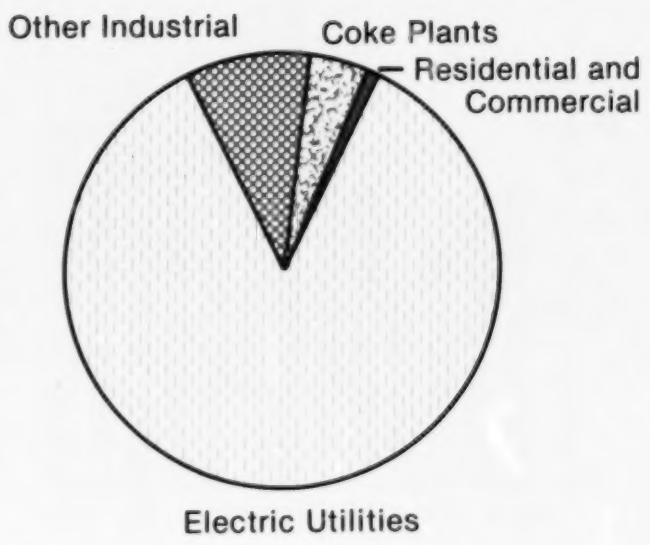
P = Preliminary data.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Consumption



1987 Consumption



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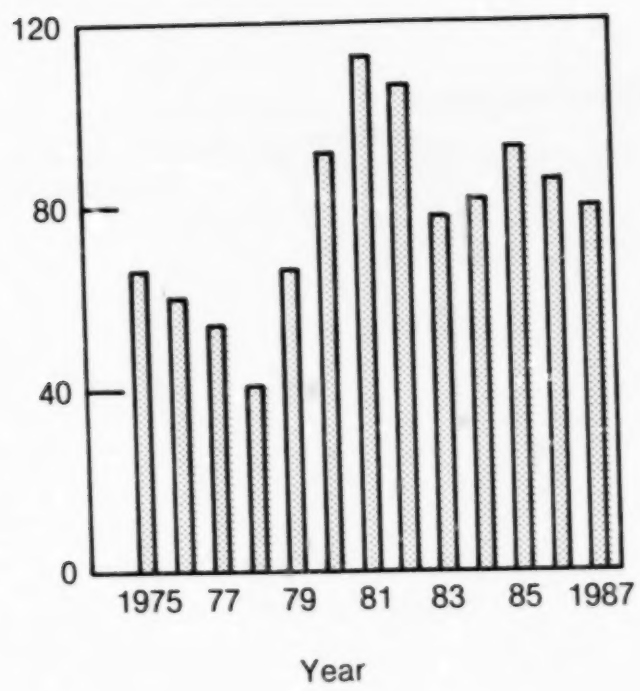
U.S. Coal Exports by Destination
(Million Short Tons)

Year	Canada	Western Europe	Japan	Other	Total
1975	17.3	19.0	25.4	4.6	**66.3**
1976	16.9	19.9	18.8	4.3	**60.0**
1977	17.7	15.0	15.9	5.8	**54.3**
1978	15.7	11.0	10.1	4.0	**40.7**
1979	19.5	23.9	15.7	6.9	**66.0**
1980	17.5	41.9	23.1	9.3	**91.7**
1981	18.2	57.0	25.9	11.4	**112.5**
1982	18.6	51.3	25.8	10.6	**106.3**
1983	17.2	33.1	17.9	9.7	**77.8**
1984	20.4	32.8	16.3	11.9	**81.5**
1985	16.4	45.1	15.4	15.8	**92.7**
1986	14.5	42.6	11.4	17.1	**85.5**
1987	16.2	34.2	11.1	18.1	**79.6**

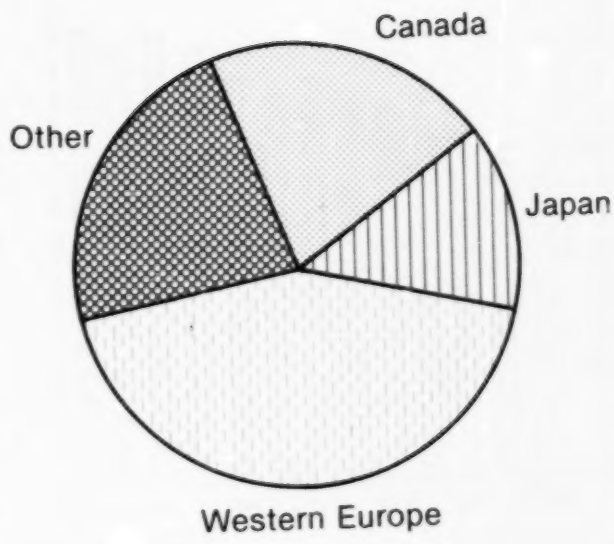
Note: Excludes overseas shipments of anthracite to U.S. Armed Forces. "Total" may not equal sum of components due to independent rounding.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Exports

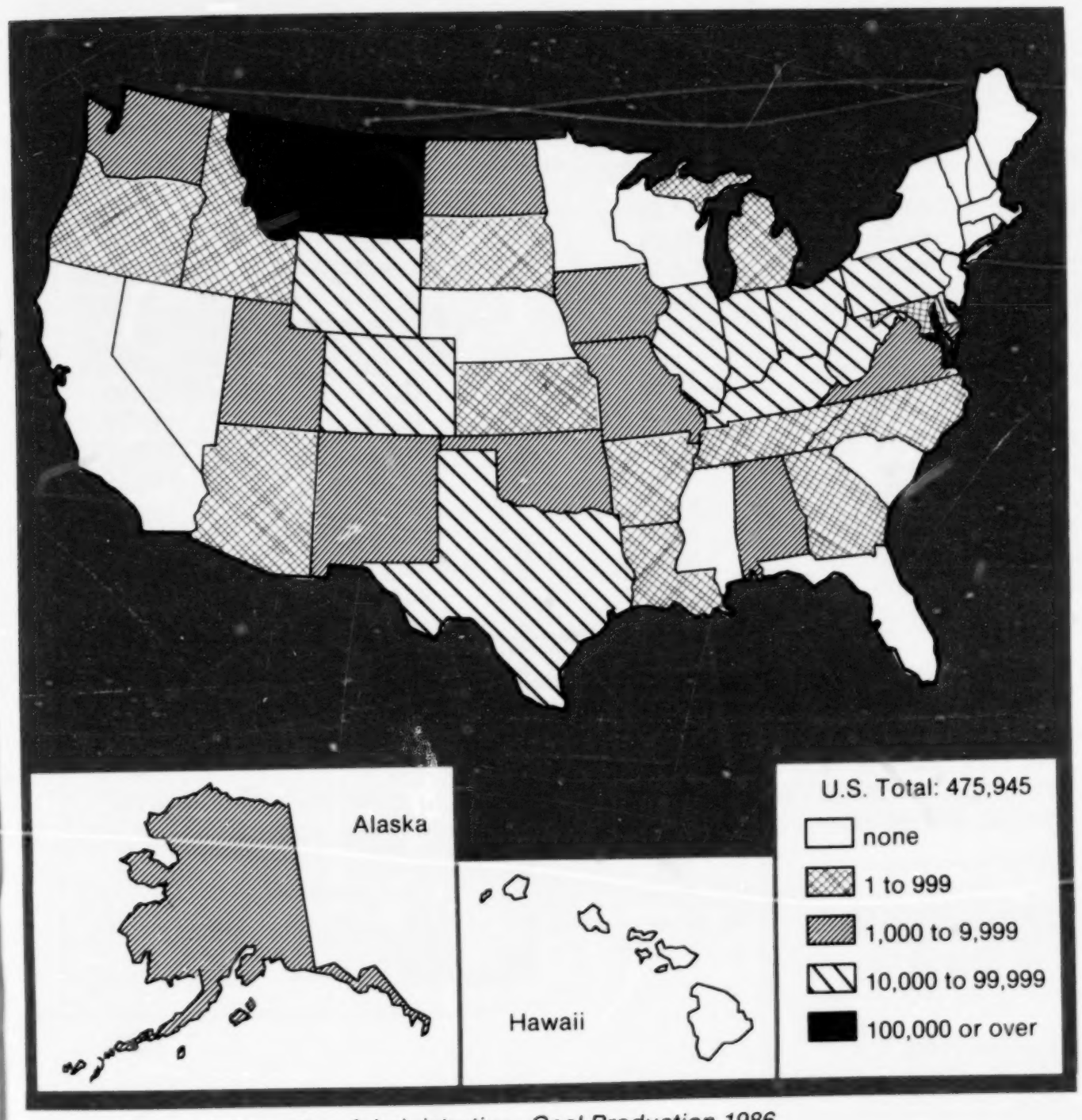


1987 Exports



Demonstrated Coal Reserve Base, January 1, 1986

(Million Short Tons)



Source: Energy Information Administration, *Coal Production 1986*.

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U.S. Average Coal and Coke Prices

(Dollars per Short Ton)

Year	Bituminous Coal* F.O.B. Mines	All Coal CIF Electric Utilities	Anthracite at Plants/ Mines**	Coal Coke at Blast Furnaces
1975	19.23	17.63	32.26	84.03
1976	19.43	18.38	33.92	85.09
1977	19.82	20.37	34.86	81.91
1978	21.78	23.75	35.25	95.95
1979	23.65	26.15	41.06	96.11
1980	24.52	28.76	42.51	101.93
1981	26.29	32.31	44.28	111.79
1982	27.14	34.90	49.85	113.91
1983	25.85	35.50	52.29	113.55
1984	25.51	35.12	48.22	102.34
1985	25.10	34.53	45.80	101.16
1986	23.70	33.30	44.12	NA
1987P	23.00	32.00	43.00	NA

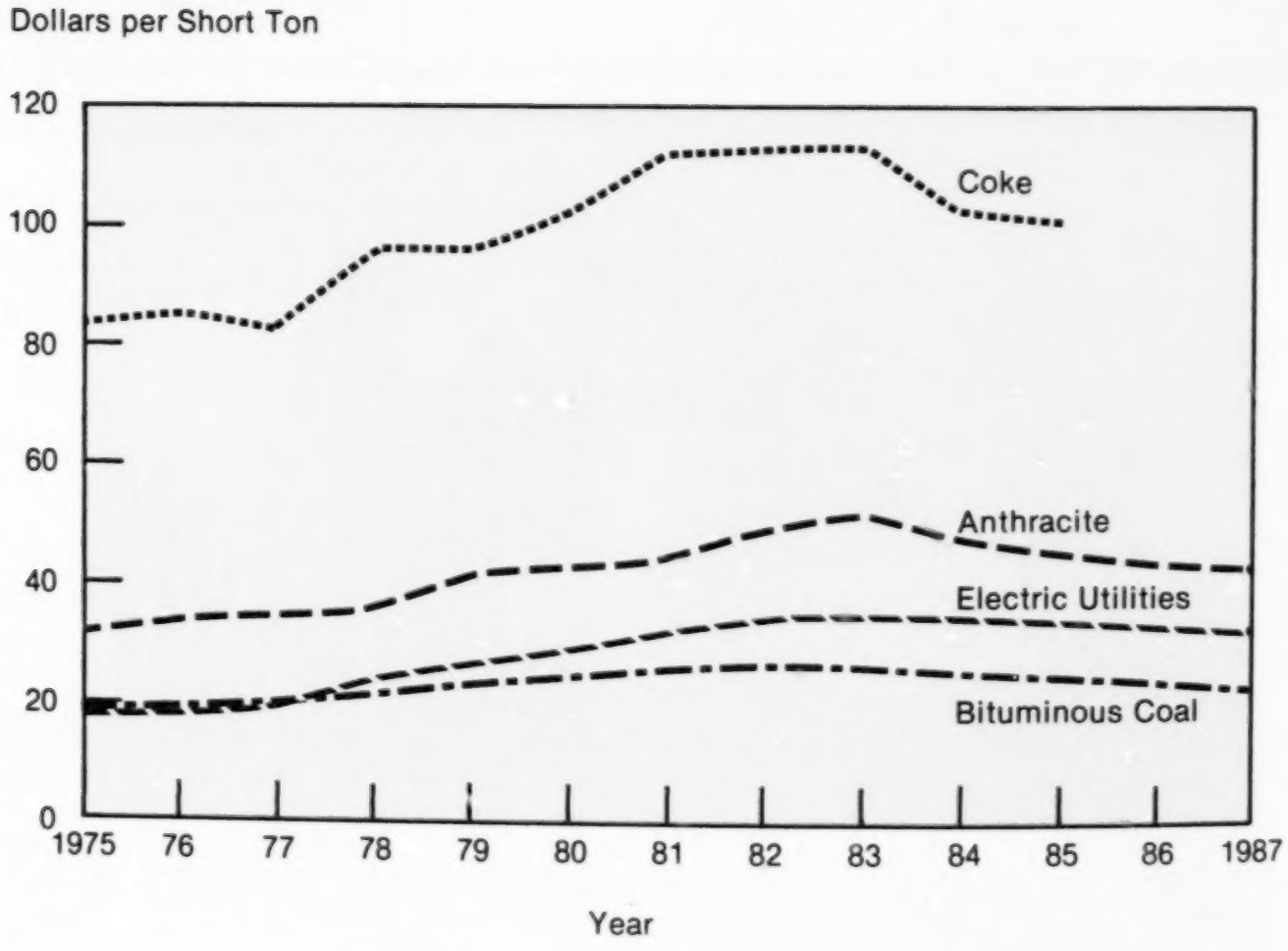
*"Bituminous Coal" includes subbituminous coal and lignite.

**1975 through 1978 prices are f.o.b. preparation plants. For 1979 forward, prices are f.o.b. mines.

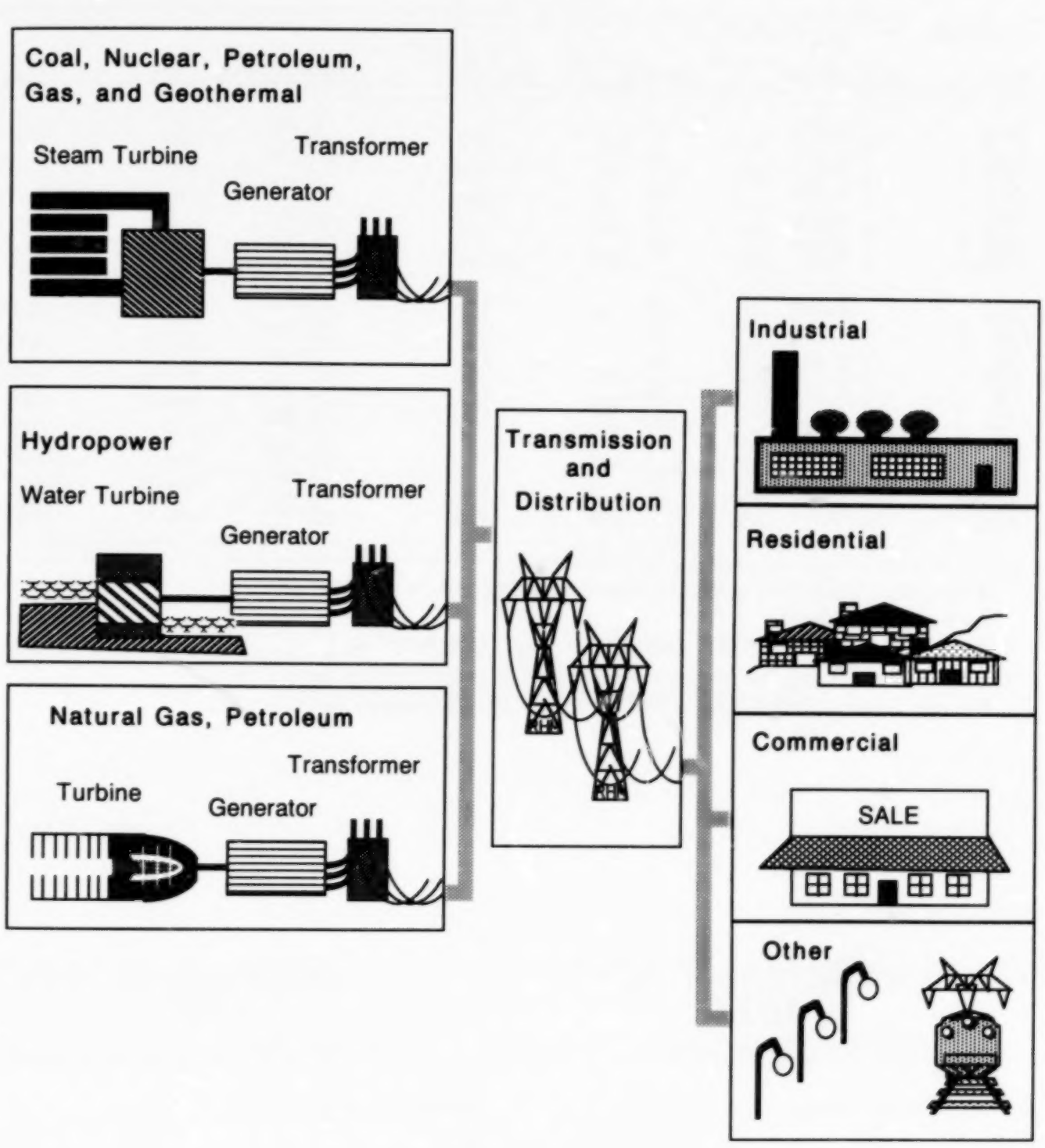
NA = Not available. P = Preliminary data.

Note: See the glossary for a definition of f.o.b. and CIF.

Source: Energy Information Administration, *Annual Energy Review 1987.*



Electricity Overview



- During 1987, a new record of net generation was set when 2,571,401 gigawatthours were produced, a 3-percent increase over last year's level.
- Water shortages in the United States during 1987 contributed to the lowest production of electricity using hydroelectric power since 1977, a 14-percent decrease from the 1986 production.
- The average retail price of electricity to residential customers in 1987 (about 7 cents per kilowatthour), was essentially unchanged from the 1986 level.
- On a dollar-per-Btu basis, electricity remained one of the most expensive sources of energy.

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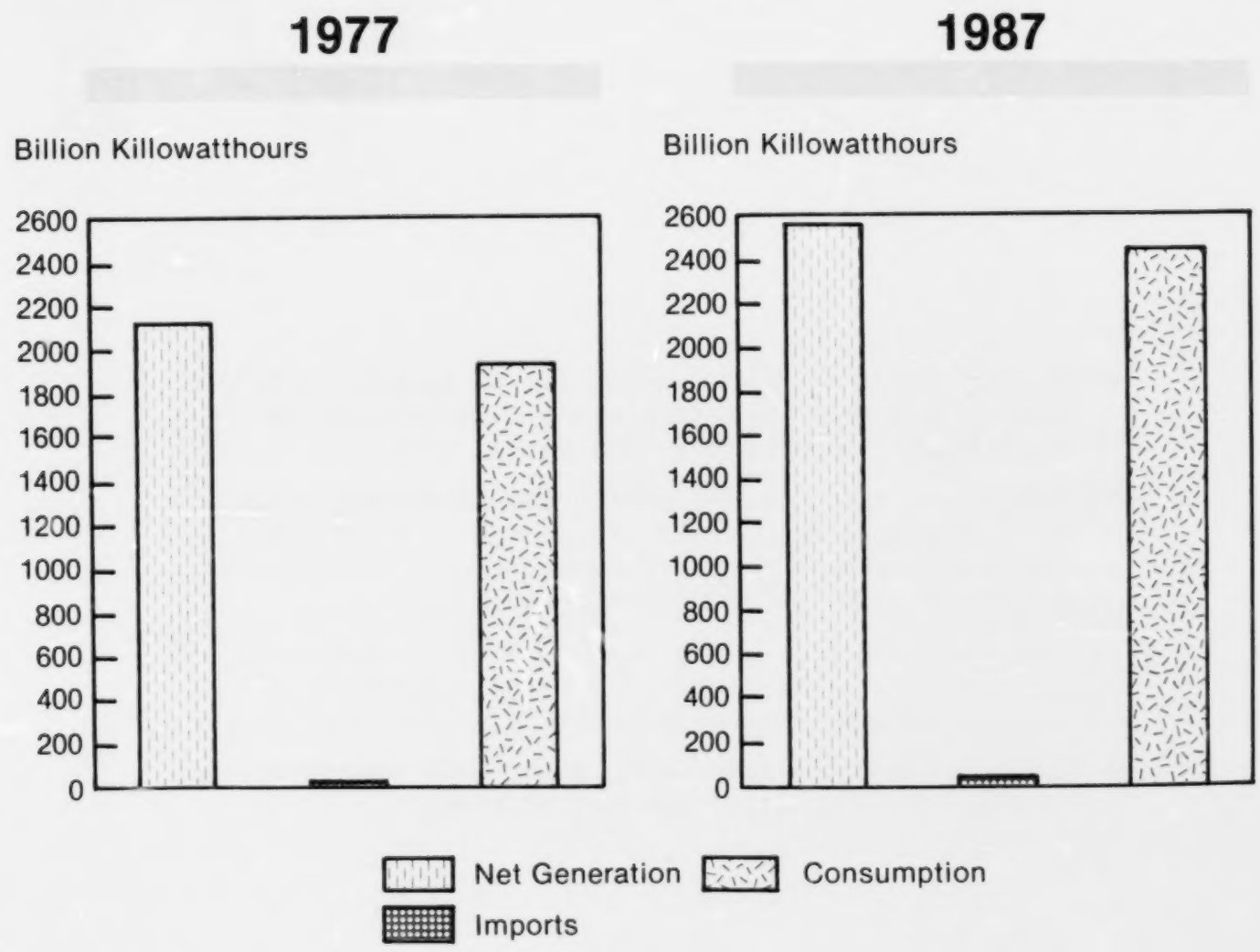
U.S. Electricity Energy Balance
(Billion Kilowatthours)

Year	Net Generation	Imports*	Exports*	Consumption
1975	1,918	11	5	1,747
1976	2,038	11	2	1,855
1977	2,124	20	3	1,948
1978	2,206	21	1	2,018
1979	2,247	23	2	2,071
1980	2,286	25	4	2,094
1981	2,295	36	3	2,147
1982	2,241	33	4	2,086
1983	2,310	39	3	2,151
1984	2,416	42	3	2,285
1985	2,470	46	5	2,326
1986	2,487	41	5	2,351
1987P	2,571	47	5	2,455

*Electricity transmitted across U.S borders with Canada and Mexico.
P = Preliminary data
Note: The sum of "Net Generation" and "Imports" less "Exports" does not equal "Consumption" due to transmission losses and unaccounted for electricity.
Source: Energy Information Administration, *Annual Energy Review 1987.*



Note: Exports in 1977 and 1987 were too small to be graphically represented.

U.S. Net Electricity Generation by Energy Source

(Billion Kilowatthours)

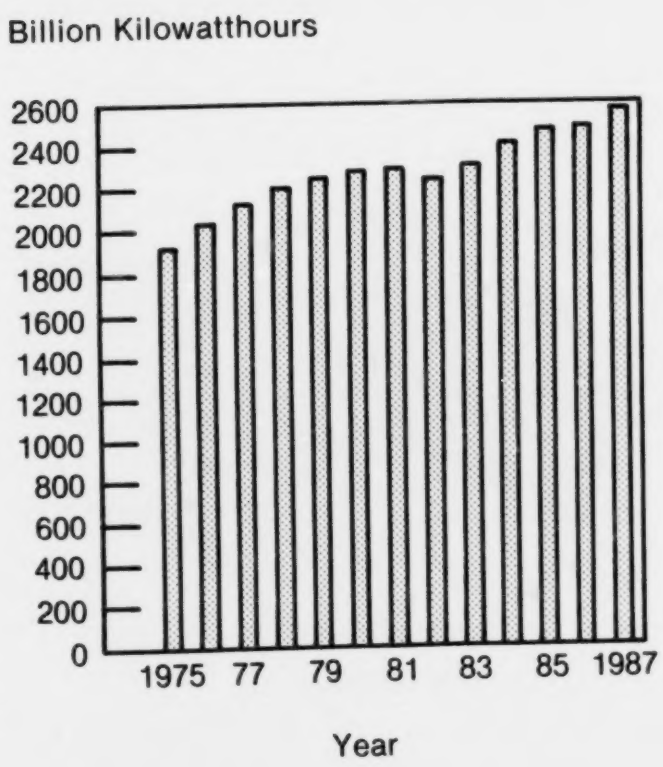
Year	Coal	Petroleum	Natural Gas	Nuclear Power	Hydro-electric Power	Other	Total
1975	853	289	300	173	300	3	**1,918**
1976	944	320	295	191	284	4	**2,038**
1977	985	358	306	251	220	4	**2,124**
1978	976	365	305	276	280	3	**2,206**
1979	1,075	304	329	255	280	4	**2,247**
1980	1,162	246	346	251	276	6	**2,286**
1981	1,203	206	346	273	261	6	**2,295**
1982	1,192	147	305	283	309	5	**2,241**
1983	1,259	144	274	294	332	6	**2,310**
1984	1,342	120	297	328	321	9	**2,416**
1985	1,402	100	292	384	281	11	**2,470**
1986	1,386	137	249	414	291	12	**2,487**
1987P	1,464	118	273	455	250	12	**2,571**

P = Preliminary data.

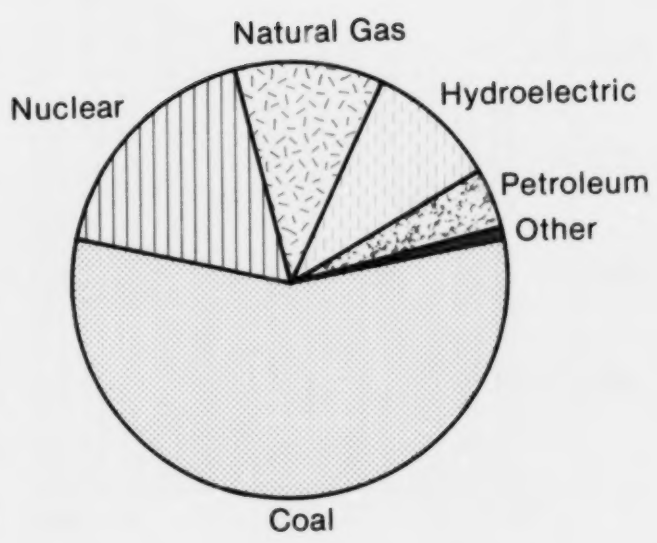
Note: Other energy sources include geothermal, wood, wind, waste, and solar. "Total" may not equal sum of components due to independent rounding.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Generation



1987 Generation



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U.S. Sales of Electricity by End – Use Sector
(Billion Kilowatthours)

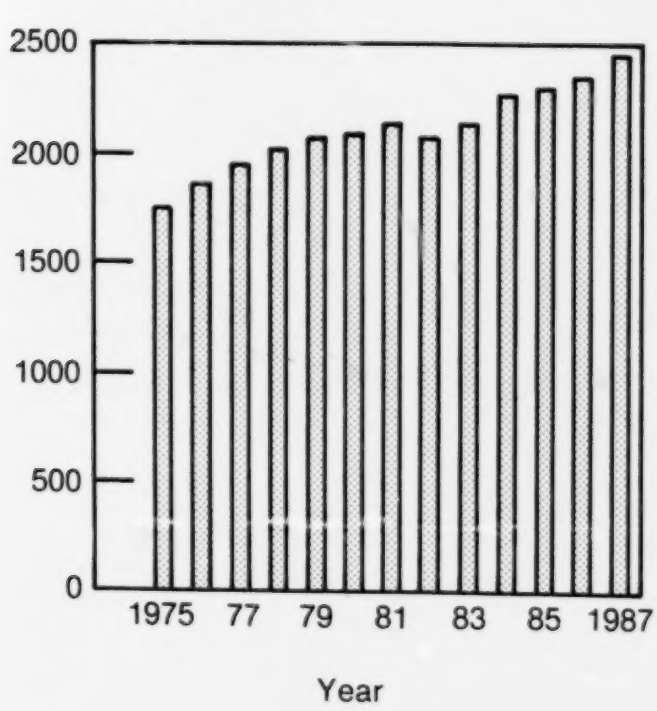
Year	End – Use Sector				
	Residential	Commercial	Industrial	Other*	Total
1975	588	403	688	68	1,747
1976	606	425	754	70	1,855
1977	645	447	786	71	1,948
1978	674	461	809	73	2,018
1979	683	473	842	73	2,071
1980	717	488	815	74	2,094
1981	722	514	826	85	2,147
1982	730	526	745	86	2,086
1983	751	544	776	80	2,151
1984	778	578	841	82	2,278
1985	791	609	825	85	2,310
1986	818	641	808	83	2,351
1987P	850	672	847	87	2,455

*"Other" sales include public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

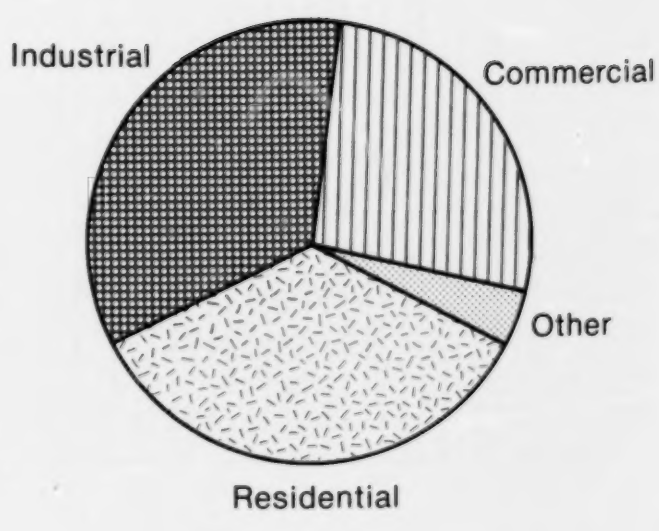
P = Preliminary data.

Source: Energy Information Administration, *Annual Energy Review 1987.*

Total Sales

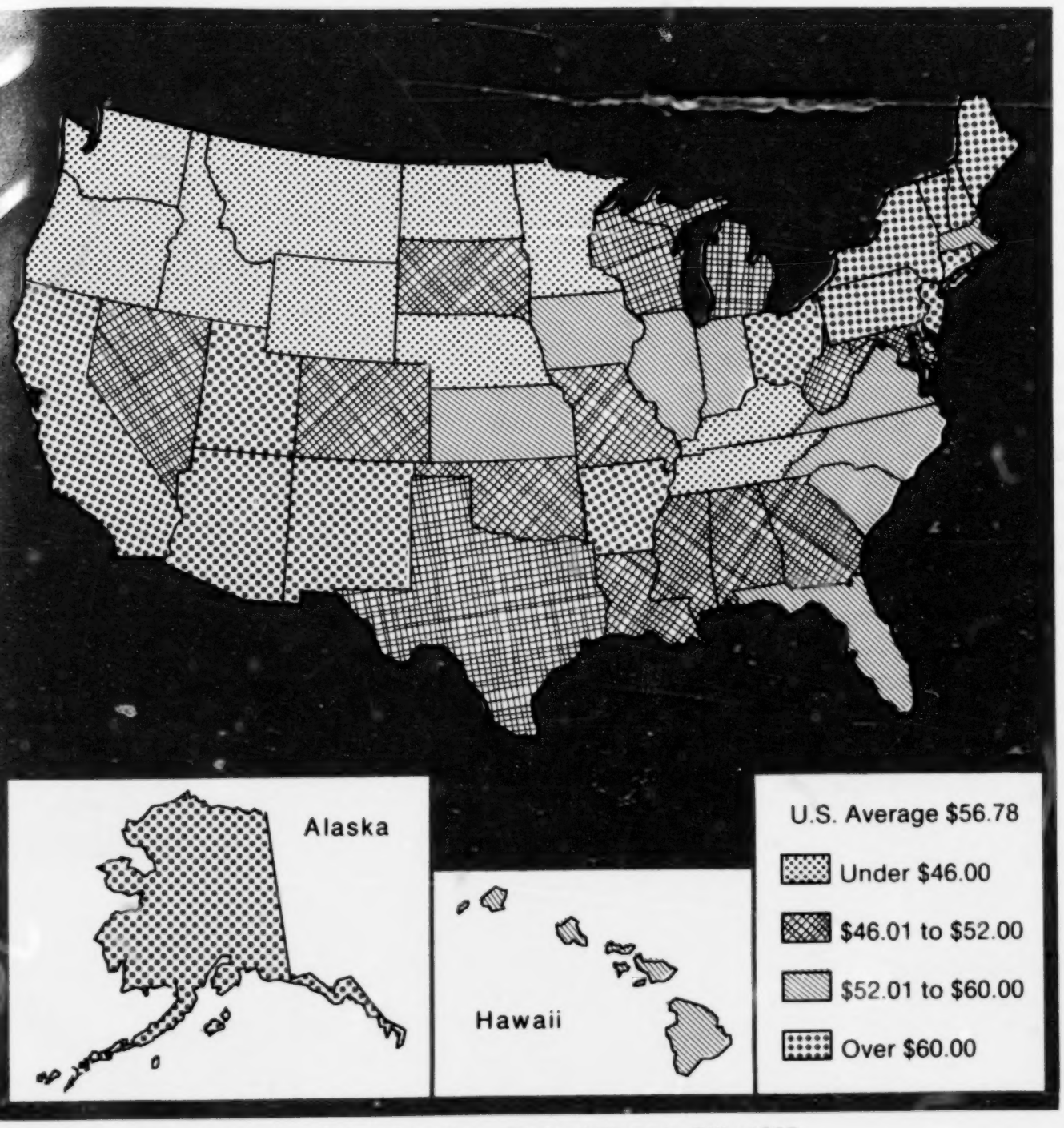


1987 Sales



Typical Residential Electric Bills for 750 Kilowatthour Service on January 1, 1987

(Dollars)



Source: Energy Information Administration, *Typical Electric Bills 1987.*

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Retail Prices of Electricity Sold by Electric Utilities

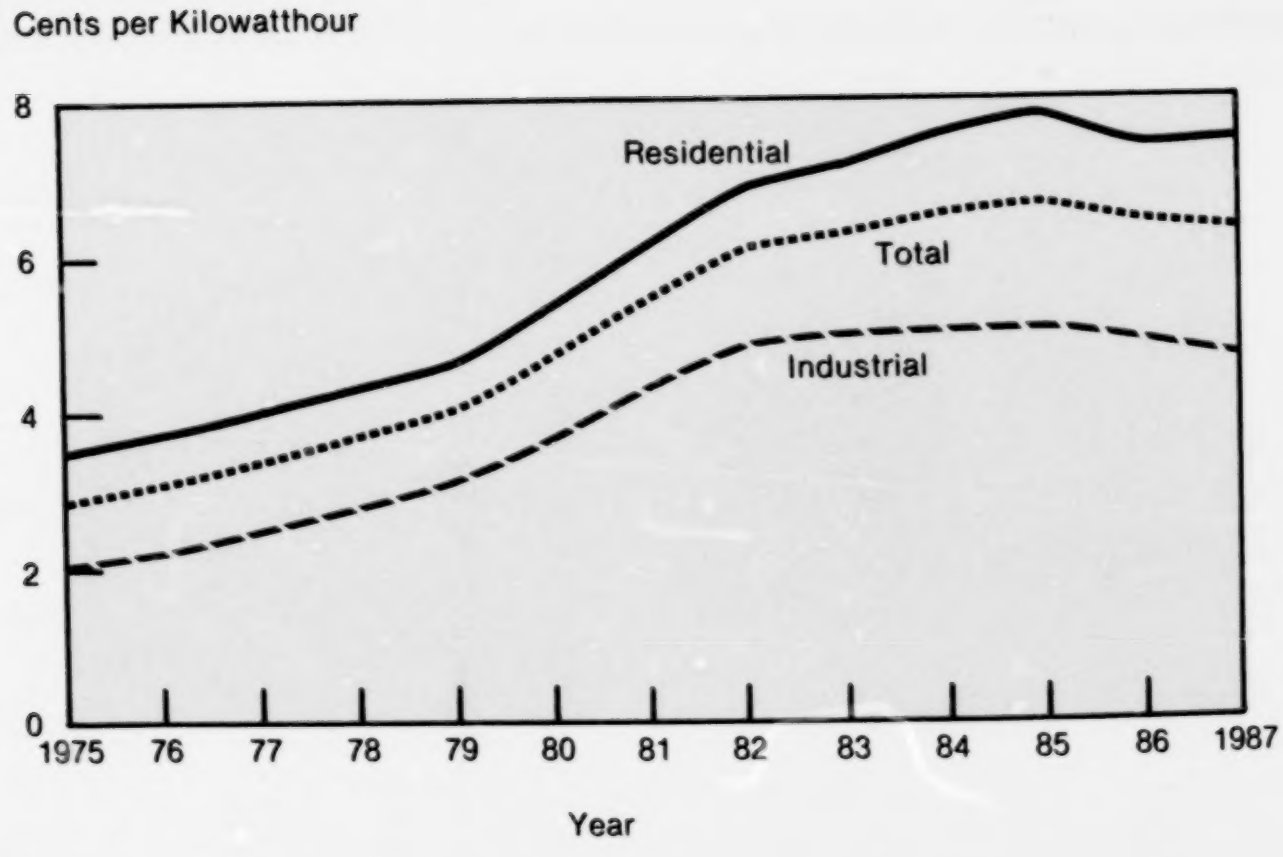
(Cents per Kilowatthour)

Year	End – Use Sector			Other	Total
	Residential	Commercial	Industrial		
1975	3.51	3.45	2.07	3.08	2.92
1976	3.73	3.69	2.21	3.27	3.09
1977	4.05	4.09	2.50	3.51	3.42
1978	4.31	4.36	2.79	3.62	3.69
1979	4.64	4.68	3.05	3.96	3.99
1980	5.36	5.48	3.69	4.76	4.73
1981	6.20	6.29	4.29	5.28	5.46
1982	6.86	6.86	4.95	5.92	6.13
1983	7.18	7.02	4.96	6.38	6.30
1984	7.54	7.33	5.04	6.78	6.52
1985	7.79	7.47	5.16	6.96	6.71
1986	7.41	7.13	4.90	6.64	6.42
1987P	7.41	7.00	4.72	6.64	6.32

P = Preliminary data.

Note: Prior to January 1986, national price estimates were based on a sample of only privately owned electric utilities. Beginning with 1986, national price estimates are based on a statistically derived sample of both publicly and privately owned electric utilities.

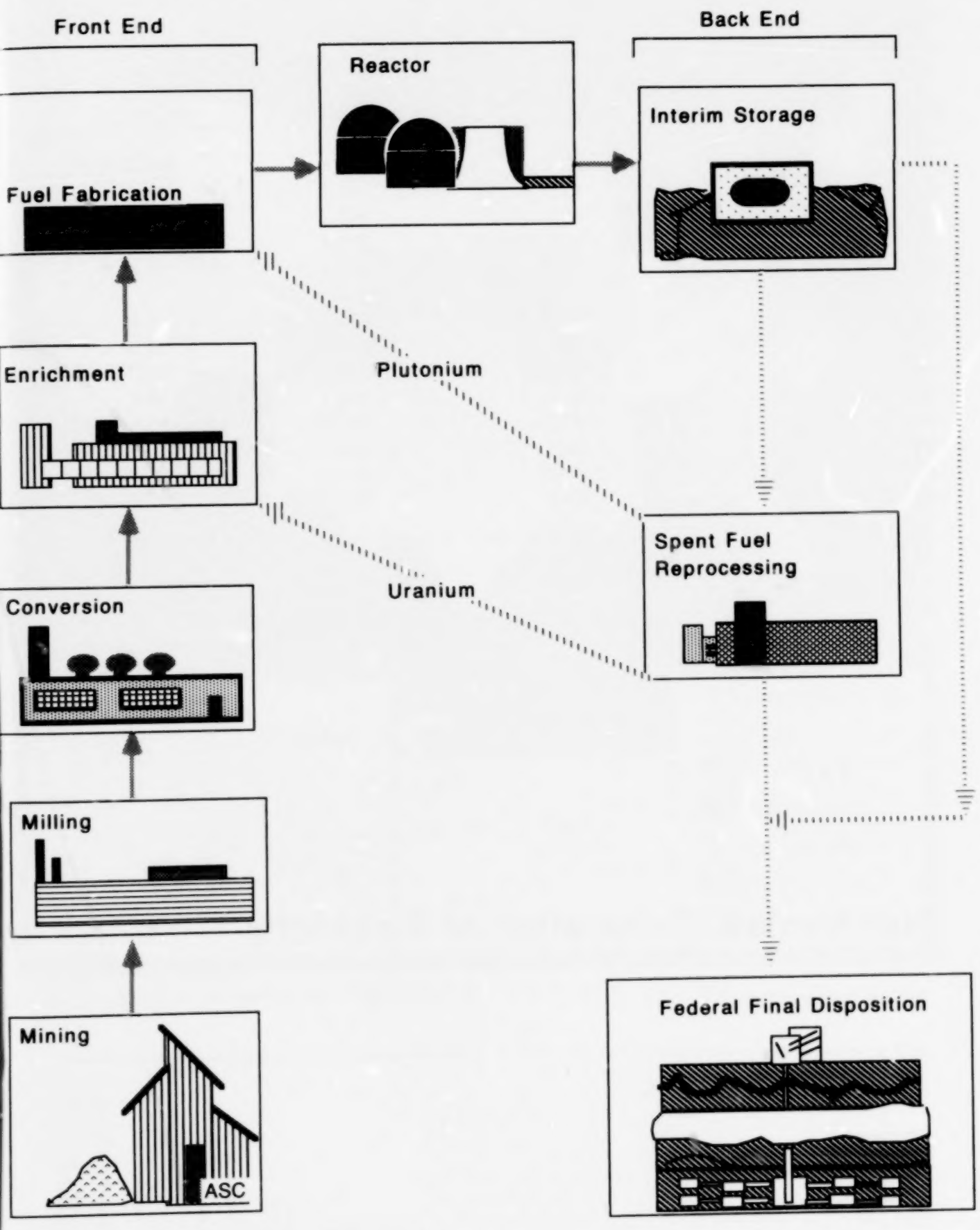
Source: Energy Information Administration, *Annual Energy Review 1987*.



Note: "Commercial" and "Residential" prices are too close to show both.

Nuclear Overview

Nuclear Fuel Cycle



Source: Energy Information Administration, *World Nuclear Fuel Cycle Requirements 1986.*

- In 1987, nuclear-powered units produced nearly 18 percent of the total U.S. net electricity, setting a new record.
- Illinois produced the most electricity using nuclear power during 1987, followed by South Carolina and Pennsylvania.

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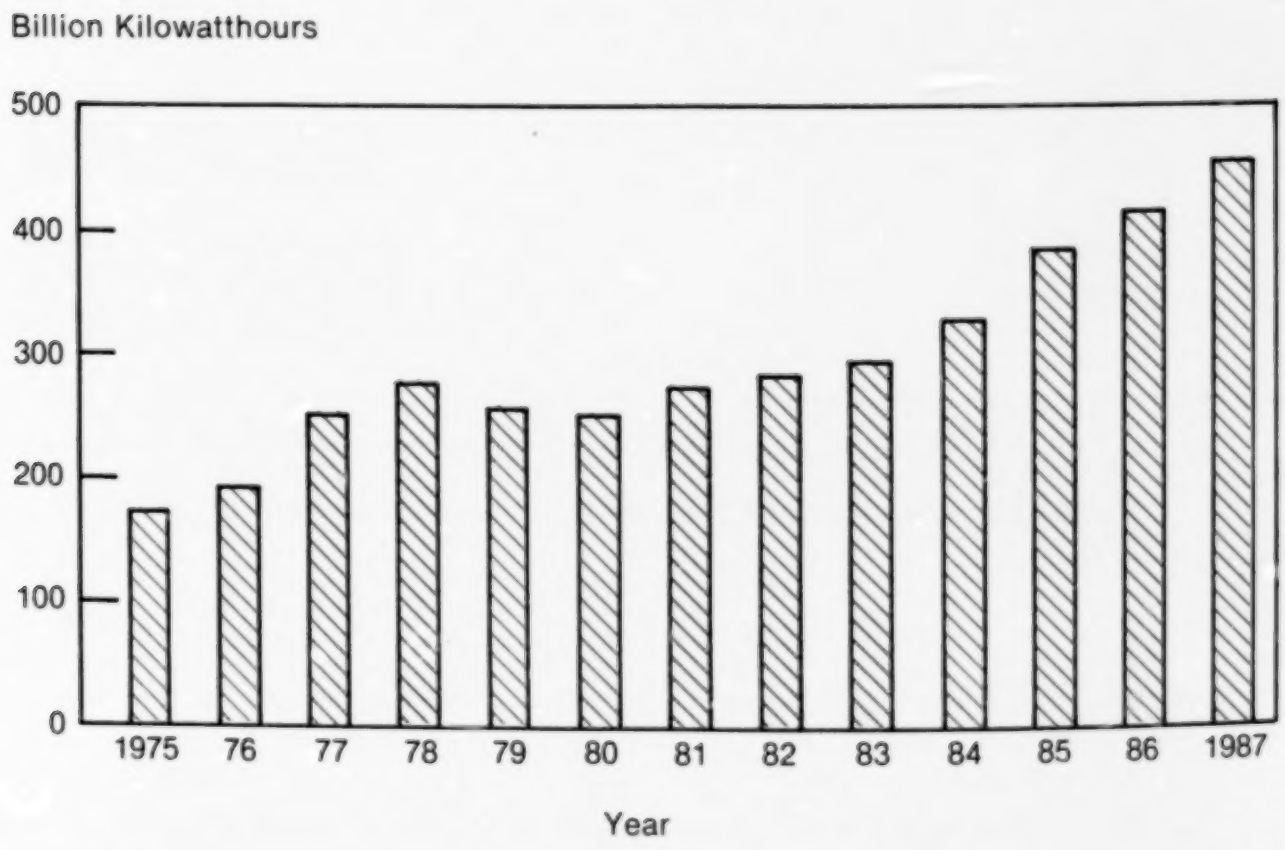
U.S. Nuclear Power Plant Net Summer Capability and Net Generation

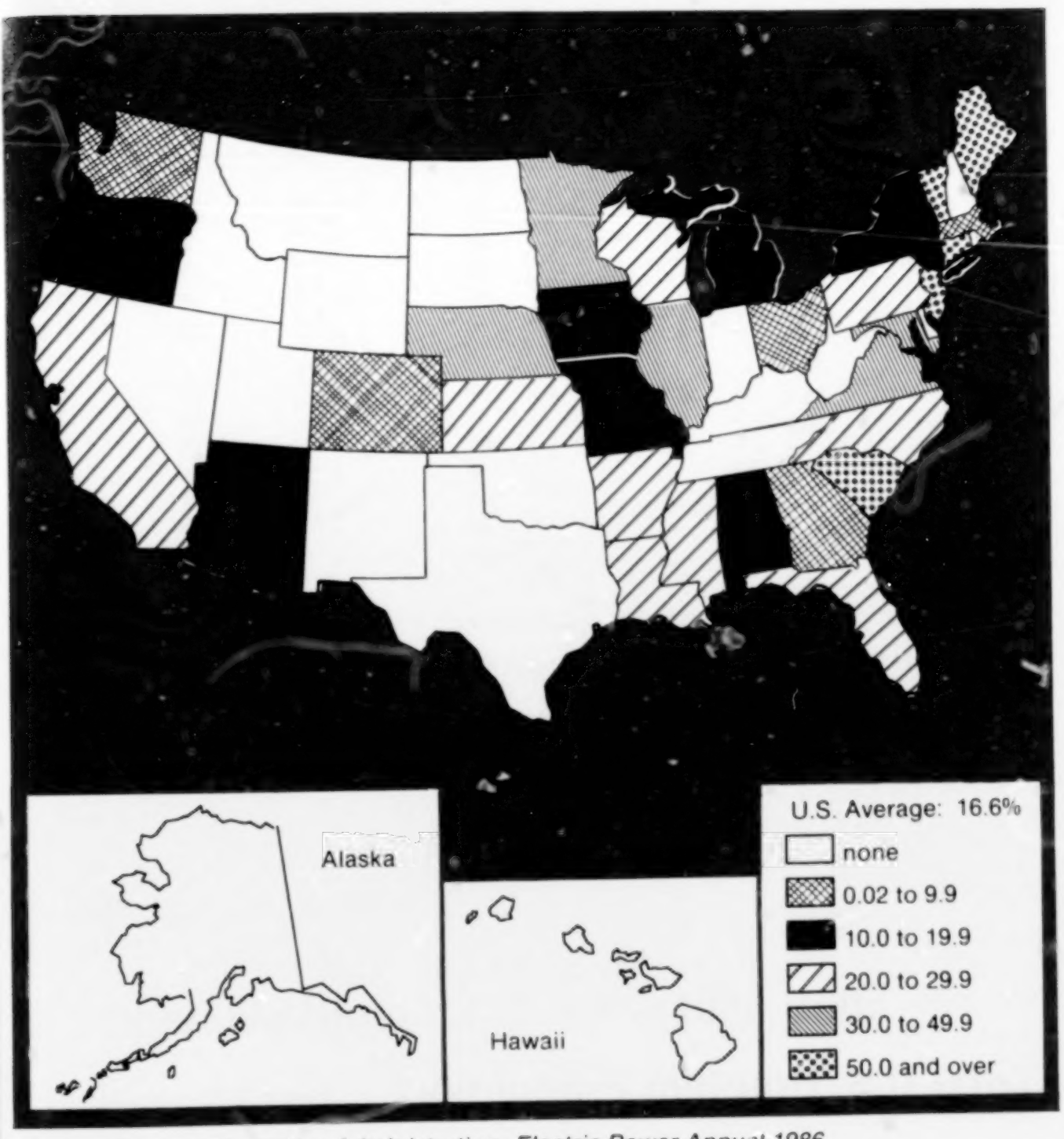
Year	End-of-Year Operable Reactors		Net Generation of Electricity	
	Number	Capability*	(billion kilowatthours)	(percent of total U.S.)
1975	54	37.2	172.5	9.0
1976	61	43.7	191.1	9.4
1977	65	46.2	250.9	11.8
1978	70	50.7	276.4	12.5
1979	68	49.6	255.2	11.4
1980	70	51.7	251.1	11.0
1981	74	55.9	272.7	11.9
1982	77	59.9	282.8	12.6
1983	80	63.0	293.7	12.7
1984	86	69.7	327.6	13.6
1985	95	79.4	383.7	15.5
1986	100	85.2	414.0	16.6
1987P	107	93.7	454.8	17.7

*Net summer capability in million kilowatts.
P = Preliminary data.
Source: Energy Information Administration, *Annual Energy Review 1987*.

Net Nuclear Generation of Electricity



Percent of Net Electricity Generated in Each State by Nuclear Power in 1986



Source: Energy Information Administration, *Electric Power Annual 1986*.

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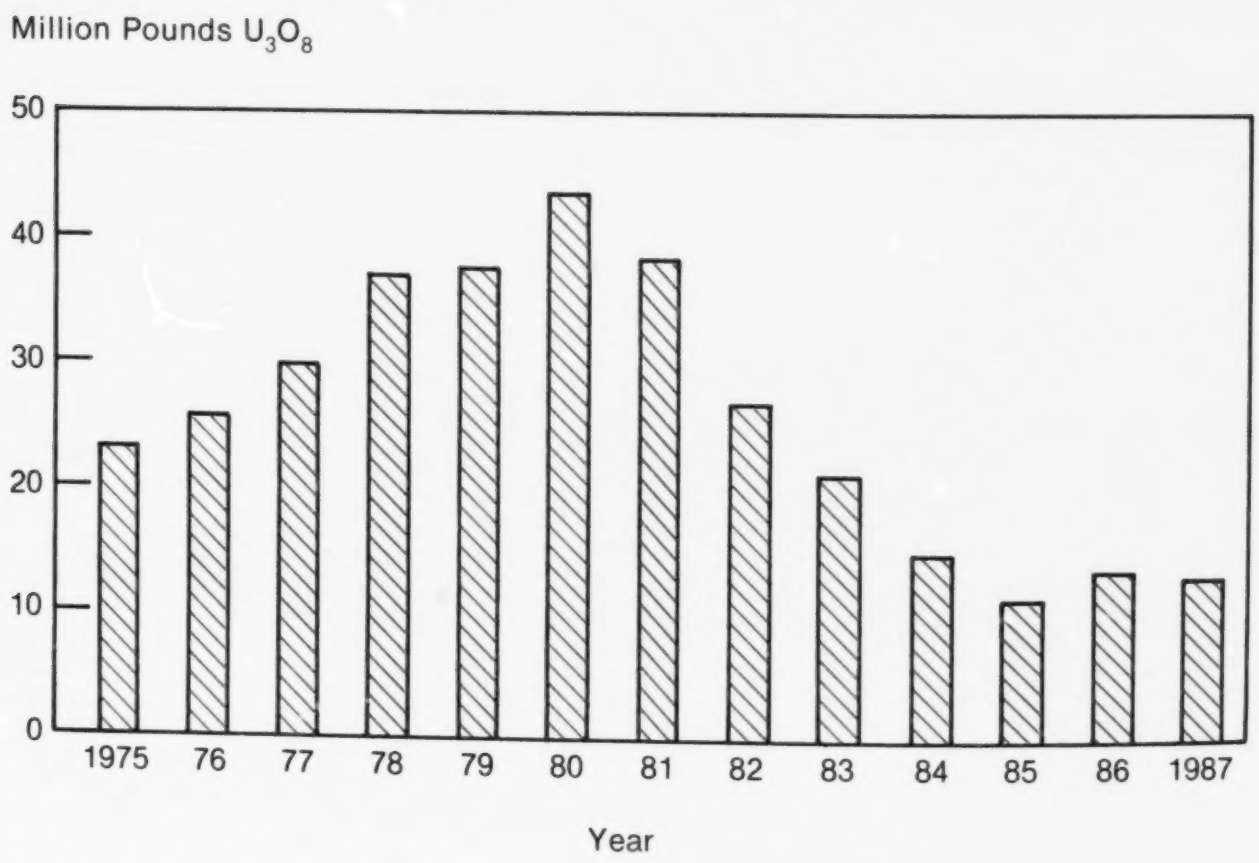
U.S. Uranium Production, Exports, and Imports

(Million Pounds of U_3O_8)

Year	Domestic Production	Imports	Exports
1975	23.2	1.4	1.0
1976	25.5	3.6	1.2
1977	29.9	5.6	4.0
1978	37.0	5.2	6.8
1979	37.5	3.0	6.2
1980	43.7	3.6	5.8
1981	38.5	6.6	4.4
1982	26.9	17.1	6.2
1983	21.2	8.2	3.3
1984	14.9	12.5	2.2
1985	11.3	11.7	5.3
1986	13.5	13.5	1.6
1987	P13.0	*9.1	*1.0

*Export and import values for 1987 are contracts in place as of June 30, 1987.
P = Preliminary data.
Note: See page 52 for a complete definition of uranium.
Source: Energy Information Administration, *Annual Energy Review 1987.*

Total U.S. Uranium Production

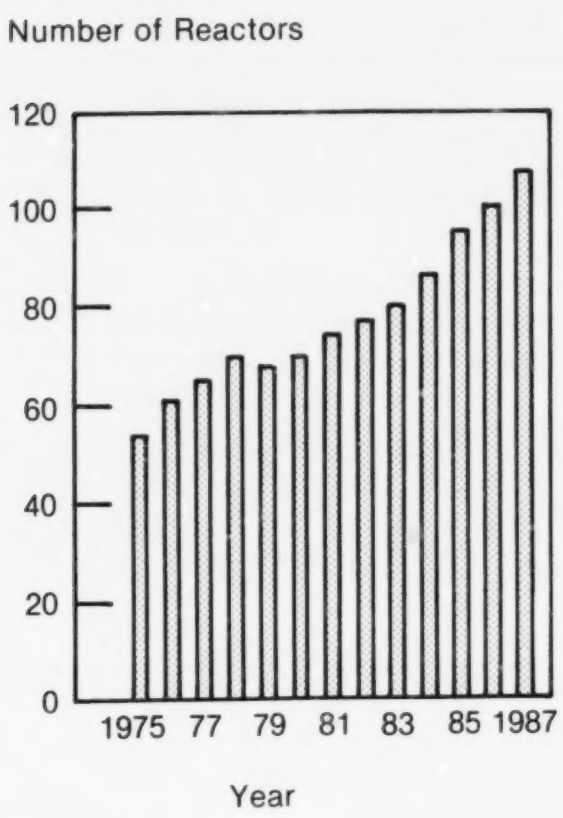


U.S. Nuclear Reactor Units, End – of – Year Status

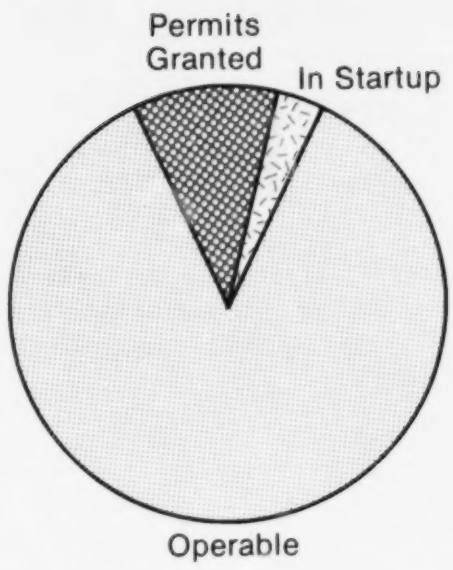
Year	Operable	In Startup	Construction Permits: Granted	Construction Permits: Pending	On Order	Announced	Total
1975	54	2	69	73	19	19	**236**
1976	61	0	72	66	16	19	**234**
1977	65	1	80	52	13	9	**220**
1978	70	0	90	32	9	4	**205**
1979	68	0	91	21	3	0	**183**
1980	70	2	82	12	3	0	**169**
1981	74	0	75	11	3	0	**163**
1982	77	2	60	3	2	0	**144**
1983	80	3	53	0	2	0	**138**
1984	86	6	38	0	2	0	**132**
1985	95	3	30	0	2	0	**130**
1986	100	7	19	0	2	0	**128**
1987	107	4	14	0	2	0	**127**

Source: Energy Information Administration, *Monthly Energy Review*, December 1987.

Operable Units



1987 Units



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World Overview

- World primary energy production attained a new high in 1986, exceeding 314 quadrillion Btu, an increase of more than 10 quadrillion Btu over 1985 production levels.
- The largest producers of crude oil and natural gas liquids in 1986 were the U.S.S.R., the United States, and Saudi Arabia.
- Two-thirds of all the dry natural gas produced in the world in 1986 came from the U.S.S.R. and the United States.
- China was the world's leading coal producer in 1986, with output reported at 959 million short tons, followed by the United States with 890 million short tons.
- The major producers of nuclear electric power in 1986 were the United States (414.0 billion kilowatthours), France (241.6), U.S.S.R. (167.0), Japan (156.6), and West Germany (111.5).

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World Primary Energy Production by Region
(Quadrillion Btu)

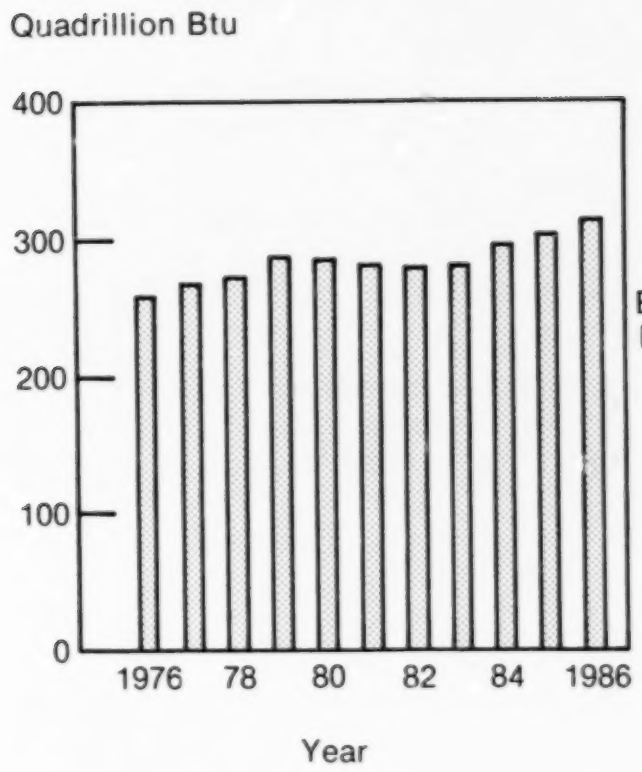
Year	North America	Central/ South America	Europe West	Europe East	Middle East	Africa	Far East/ Oceania	Total
1976	71.2	10.7	22.3	60.2	49.1	15.5	30.6	**259.7**
1977	72.3	10.9	23.9	63.0	49.8	16.5	32.0	**268.3**
1978	74.0	11.2	24.8	65.4	47.3	16.7	34.4	**273.7**
1979	78.3	12.2	27.4	67.5	48.7	18.3	35.9	**288.3**
1980	80.5	12.2	28.7	69.2	42.1	17.4	36.5	**286.4**
1981	80.9	12.1	29.8	69.7	36.7	15.0	37.4	**281.5**
1982	81.3	12.0	30.7	72.2	29.5	15.1	38.8	**279.7**
1983	79.0	12.2	31.9	74.1	27.3	15.9	41.4	**281.8**
1984	84.6	13.1	32.4	76.6	27.7	17.2	45.0	**296.5**
1985	84.1	13.4	35.0	78.5	25.7	18.1	49.0	**303.8**
1986	83.2	14.1	35.6	81.7	30.8	17.8	51.0	**314.1**

P = Preliminary data.

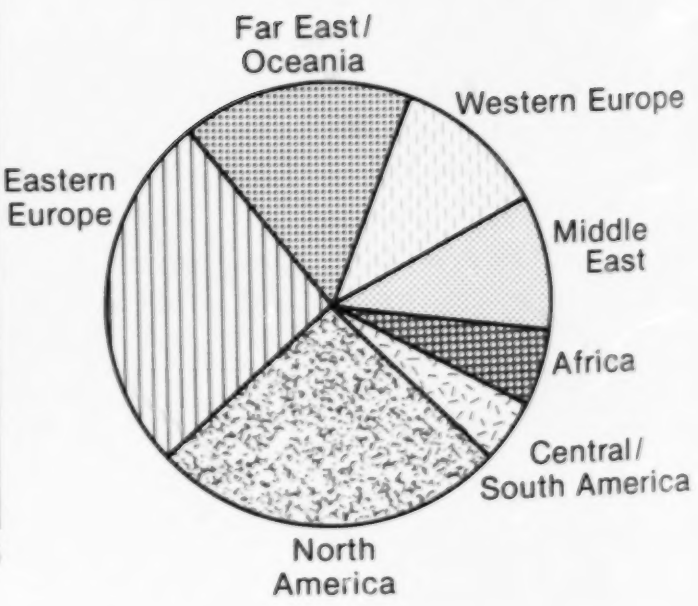
Note: "Total" may not equal sum of components due to independent rounding. Eastern Europe includes U.S.S.R.

Source: Energy Information Administration, *International Energy Annual 1986.*

World Total



1986 Distribution



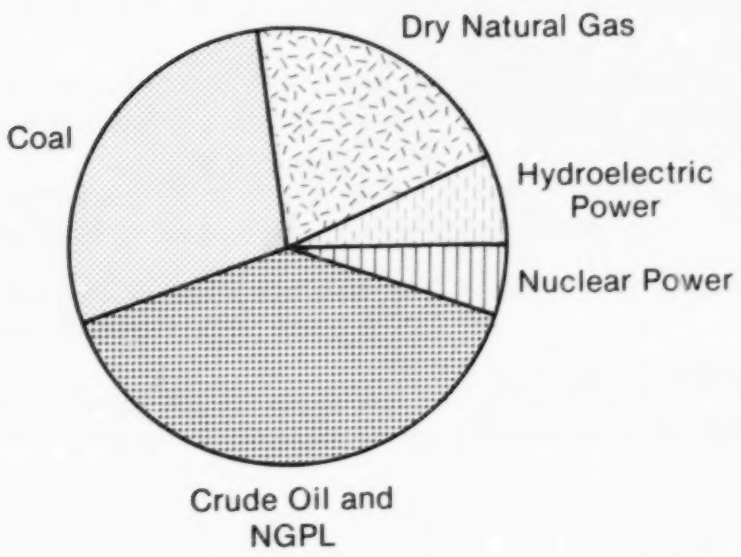
World Primary Energy Production by Source

(Quadrillion Btu)

Year	Crude Oil and NGPL*	Natural Gas (Dry)	Coal	Hydro-electric Power	Nuclear Power	**Total**
1976	127.1	45.7	67.3	15.1	4.5	**259.7**
1977	132.0	46.9	68.5	15.5	5.4	**268.3**
1978	132.8	48.2	69.5	16.8	6.5	**273.7**
1979	138.5	51.6	73.8	17.6	6.7	**288.3**
1980	133.0	52.8	75.0	18.2	7.5	**286.4**
1981	125.2	54.2	75.2	18.4	8.5	**281.5**
1982	119.4	53.7	78.4	18.9	9.4	**279.7**
1983	118.9	54.0	78.5	19.8	10.7	**281.8**
1984	122.1	59.0	82.2	20.3	12.8	**296.5**
1985	120.6	61.5	86.0	20.6	15.2	**303.8**
1986P	126.1	62.6	88.2	20.7	16.4	**314.1**

*NGPL = Natural gas plant liquids.
P = Preliminary data.
Note: "Total" may not equal sum of components due to independent rounding.
Source: Energy Information Administration, *International Energy Annual 1986*.

1986 Distribution



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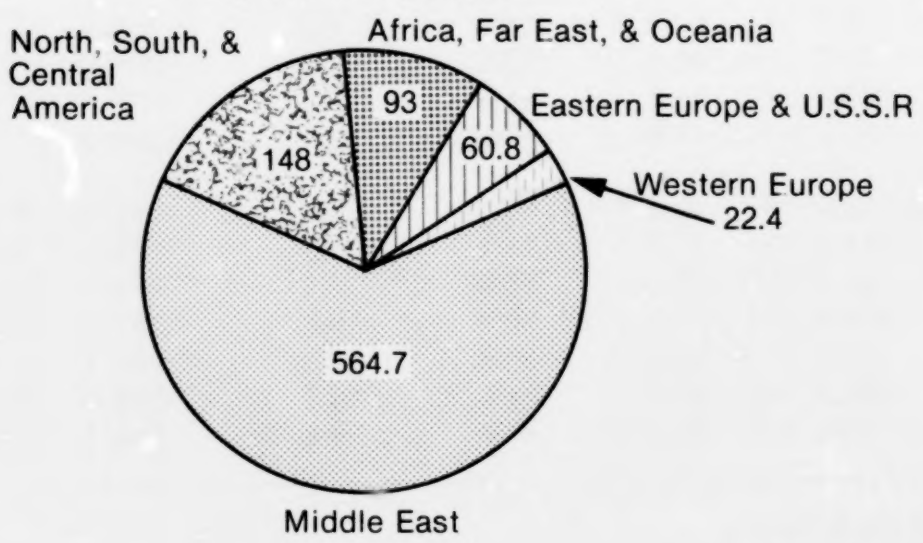
World Fossil Fuel Reserves

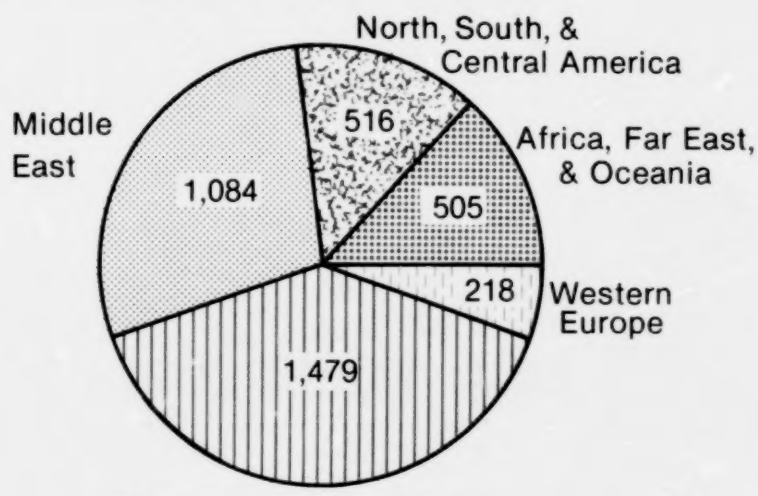
Crude Oil
End of Year 1987

888.9 Billion Barrels



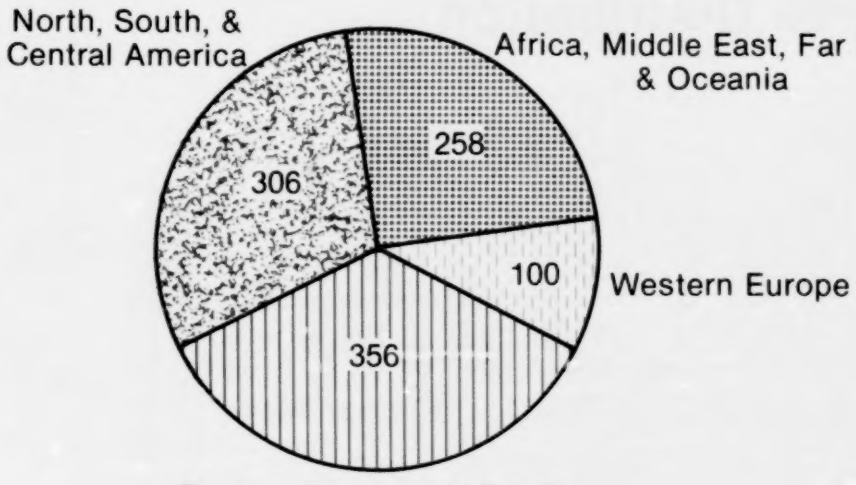
Natural Gas
End of Year 1987

3,802 Trillion Cubic Feet



Coal
1984

1,019.3 Billion Short Tons



Source: Energy Information Administration, *Annual Energy Review 1987.*

Glossary

Anthracite: A hard, jet black, solid fossil fuel with a high luster, it is the highest rank of coal. It is mined primarily in northeast Pennsylvania.

Barrel: A liquid measure defined as 42 U.S. gallons.

Bituminous Coal: Most common type of solid fossil fuel; it is soft, dense, and black with well defined bands of bright and dull material. It is mined chiefly in Kentucky, Pennsylvania, Illinois, and West Virginia.

Btu (British thermal unit): A standard unit for measuring the quantity of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit.

CIF (Cost, Insurance, and Freight): Used in sales price contracts, CIF generally includes the cost of goods, freight charges to a named destination, and the insurance charges on the goods shipped.

Coal: A black or brownish – black solid combustive substance formed by the partial decomposition of vegetable matter without free access to air.

Coal Coke: A hard, porous product made from baking bituminous coal in ovens at temperatures as high as 2,000 degrees. It is used both as a fuel and as a reducing agent in smelting iron ore in a blast furnace.

Crude Oil: A mixture of hydrocarbons that existed in a liquid phase in underground reservoirs and remains liquid after passing through processing facilities at the surface.

Dry Natural Gas Production: Gross withdrawals from production reservoirs less gas used in reservoir repressuring, amounts vented and flared, nonhydrocarbons removed, and various natural gas constituents such as ethane, propane, and butane removed at natural gas processing plants.

F.O.B. (free on board): Used in sales price quotations, the f.o.b. price involves sellers assuming all responsibility and costs up to the specific point of delivery and buyers taking responsibility at that point.

Fossil Fuel: Any naturally occurring fuel of an organic nature, such as petroleum, coal, and natural gas.

Geothermal Power: Electricity generated at a conventional steam electric plant where turbines are driven either by steam produced from hot water or by natural steam trapped below the surface of the earth's crust.

Hydroelectric Power: Electricity generated by an electric power plant whose turbines are driven by falling water.

Kilowatthour: One thousand watthours.

Lignite: The lowest rank of coal, which is brownish black and has a high moisture content. Used mainly to generate electricity, it is mined primarily in North Dakota, Montana, and Texas.

Natural Gas: A mixture of hydrocarbons and small quantities of various nonhydrocarbons, existing in the gaseous phase or in solution with crude oil in underground reservoirs.

Natural Gas Liquids: Hydrocarbons in natural gas that are separated as a liquid from the gas at lease separators, field facilities, and natural gas processing plants.

Net Generation: Total amount of electrical energy produced less the electrical energy consumed at the generating station for station use.

Net Summer Capability: The steady hourly output that generating equipment is expected to supply to system load, exclusive of auxiliary power, as demonstrated by test at the time of summer peak demand.

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Nuclear Power: Electricity generated by an electric power plant whose turbines are driven by steam produced in a reactor by heat from the fissioning of nuclear fuel.

OPEC (Organization of Petroleum Exporting Countries): Arab OPEC countries are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and United Arab Emirates. Non – Arab OPEC countries are Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela.

Petroleum: A term applied to oil and oil products in all forms including crude oil, lease condensate, unfinished oils, petroleum products, and natural gas plant liquids.

Petroleum Products: Ready – for – consumption products obtained through the processing of crude oil and natural gas. Refined products include liquefied petroleum gases, aviation gasoline, motor gasoline, jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Proved Reserves, Liquid and Gaseous Hydrocarbons: The estimated quantities of crude oil, natural gas, and natural gas liquids in the ground that geological data demonstrate with reasonable certainty to be recoverable in future years under existing economic and operating conditions.

Short Ton: A unit of weight equal to 2,000 pounds.

Subbituminous Coal: A dull black coal often referred to as black lignite, used for generating electricity and space heating. It ranks between bituminous and lignite and is mined primarily in Wyoming and Montana.

Uranium: A heavy radioactive element containing two isotopes, uranium 235, and uranium 238. Uranium 235 is indispensable to the nuclear industry as it is the only naturally occurring isotope that can undergo fission.

Watt: The electrical unit of power or rate of doing work or the rate of energy transfer equivalent to 1 ampere flowing under the pressure of 1 volt. Watt is analogous to horsepower (i.e., 1 horsepower is equivalent to approximately 746 watts).

Units of Measure

Weight

1 short ton	contains	2,000 pounds
1 metric ton	contains	1.102 short tons
1 long ton	contains	1.120 short tons

Volume

1 cubic foot	contains	0.028 cubic meters
1 cubic meter	contains	35.315 cubic feet
1 U.S. barrel	contains	42 U.S. gallons
1 cord of wood	contains	128 cubic feet

Conversion Factors for Crude Oil (Average Gravity)

1 U.S. barrel	weighs	0.136 metric tons
1 U.S. barrel	weighs	0.150 short tons
1 metric ton	contains	7.330 U.S. barrels
1 short ton	contains	6.650 U.S. barrels

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Energy Equivalents

One Btu equals approximately:

1 blue – tip kitchen match

One thousand Btu equals approximately:

1 average candy bar (252 kilocalories or food calories)
1 hour of bicycling
4/5 of one peanut butter and jelly sandwich
2 glasses of table wine (5 fluid ounces each)

One million Btu equals approximately:

90 pounds of U.S. coal production
120 pounds of oven – dried hardwood
8 gallons of motor gasoline or the amount it took in 1986 to move the average passenger car in the United States about 146 miles
10 therms of dry natural gas
11 gallons of propane
1.2 days of energy consumption per person (U. S. – 1984)
2 months of dietary intake of a laborer

One million Btu of fossil fuels burned at electric utilities can generate about 100 kilowatthours of electricity, while about 300 kilowatthours of electricity generated at electric utilities can produce about 1 million Btu of heat.

One quadrillion Btu of heat equals approximately:

45 million short tons of coal production
60 million short tons of oven – dried hardwood
1 trillion cubic feet of dry natural gas
171 million barrels of crude oil
470 thousand barrels per day of crude oil for 1 year
27 days of petroleum imports into the United States
26 days of United States motor gasoline usage
28 hours of world energy consumption (1986)

One barrel of crude oil equals approximately:

15 days of petroleum consumption per person (U.S. – 1987)
5.6 thousand cubic feet of dry natural gas
0.26 short tons (or 520 pounds) of coal production
1,700 kilowatthours of electricity consumed

One short ton of coal equals approximately:

106 days of coal consumption per person (U.S. – 1987)
3.8 barrels of crude oil
21 thousand cubic feet of dry natural gas
6,500 kilowatthours of electricity consumed

One thousand cubic feet of natural gas equals approximately:

5.3 days of natural gas consumption per person (U.S. – 1987)
0.18 barrels (or 7.4 gallons) of crude oil
0.047 short tons (or 93 pounds) of coal production
300 kilowatthours of electricity consumed

One thousand kilowatthours (kWh) of electricity equals approximately:

36 days of electricity consumption per person (U.S. – 1987)
0.59 barrels of crude oil (although it takes about 1.8 barrels of oil to produce 1,000 kWh)
0.15 short tons (or 310 pounds) of coal production (although it takes about 0.47 short tons to produce 1,000 kWh)
3,300 cubic feet of dry natural gas (although it takes about 10,000 cubic feet to produce 1,000 kWh)

Energy Information Assistance

NEIC
202/586-8800

Statistical and analytical energy data, information, and referral assistance to government, private organizations, and individuals are available from:

National Energy Information Center
Energy Information Administration
Forrestal Building
Washington, DC 20585
202/586 – 8800

Subject information specialists for specific energy sources provide personalized service in responding to energy inquiries at the National Energy Information Center.

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P.O. Box 8900
Silver Spring, MD 20907

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